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United Nations
Geneva, Switzerland

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Dear Emilie,

AN SOS FROM SOUTH AFRICA

We met at the SABS/STUK conference in Johannesburg in October 2007. I am on the managing committee of the Electromagnetic Action Group South Africa (EmagSA). We have been looking into issues of health and electromagnetic pollution since 1992, before the advent of cellphones here, but mobile phones and base stations have now become our main concern, particularly cellphone masts in school grounds.

Emilie, I am writing in particular regarding a case of a broadband wireless tower that has been erected in Craigavon, a residential suburb in northern Johannesburg. The company concerned is iBurst, which uses a particular technology (beam forming, or spatial division multiple access) in which an antenna array directs signals specifically towards a user, allowing the same frequency channel to be used more than once by a mast. You can find more about the technology here:

<http://global.kyocera.com/prdct/telecom/office/iburst/technicaloverview20080730.pdf>

You will see that this system allows for particularly high user density. These are very "busy" masts indeed, and people living close to such a mast are exposed to an entirely unprecedented spectral intensity of radiation.

There are serious questions as to whether the planning regulations were followed properly in setting up this tower, but the fact is that it went into operation in late August, and since then there have been a number of health complaints from residents and problems with pets, insects and plants which we are certain are related to this mast's operation.

I will go into detail about this later, but I first want to make it clear why I am approaching you with this matter.

As was clarified during the plenary sessions of the SABS/STUK conference, there are **no health regulations in force** in South Africa with regard to RF utilities. The Department of Health's deputy director of radiation control, Leon du Toit, phrased it thus at the conference: "There is no licensing process with regard to health."

It was stated in written answers to questions in Parliament by the Minister of Health in 2005 that the RF health regulations were withdrawn in November 2002 as a result of dissatisfaction on the part of the operators at some of the terminology used. The minister said that the operators could regulate themselves, and there was no health problem because the WHO had said there was no health problem.

Du Toit, who is the spokesperson for the Department of Health in this regard, has stated on television that he follows the World Health Organisation, and if they say there is a problem, he will act. Until then, he does not see any problems, and the department does no field research or measurements whatsoever.

So it is a fact that the World Health Organisation is both the *de facto* and the *de jure* authority in South Africa with regard to radiation health. The operators are told to follow the WHO's recommendations, and thus they adopt the radiation guidelines of the International Commission on Non-Ionising Radiation Protection (ICNIRP).

So it is in your capacity of being the ultimate authority over radiation and health in South Africa that I am making this appeal to you.

Many people around the world have registered complaints about the standards and principles employed by ICNIRP. In fact, a petition was organised in Switzerland some years ago, appealing to then UN Secretary General Kofi Annan **not** to take advice from ICNIRP, which petition was signed by thousands of people. This appeal was ignored by the United Nations.

<http://www.wave-guide.org/archives/emf-1/Sep2000/Fw-Letter-to-Kofi-Annan--United-Nations-Director-.html>

The ICNIRP guidelines (1988, amended 1998 -- and thus more than ten years out of date with respect to recent technologies like "beam forming") state:

"These guidelines are based on short-term, immediate health effects such as stimulation of peripheral nerves and muscles, shocks and burns caused by touching conducting objects, and elevated tissue temperature resulting from absorption of energy during exposure to EMF. In the case of potential long-term effects of exposure, such as increased risk of cancer, ICNIRP concluded that available data are insufficient to provide a basis for setting exposure restrictions."

http://www.tetrawatch.net/papers/icnirp_inadequate.pdf

In other words, ICNIRP by its own admission has **no scientific basis** for setting long-term exposure guidelines for the general public. Yet they go ahead and set long-term exposure guidelines anyway, which are only based on thermal properties and short-term heating effects. This is then regarded as "science-based", when it is actually **openly based on ignorance**.

The WHO fact sheet on base stations states:

"From all evidence accumulated so far, no adverse short- or long-term health effects have been shown to occur from the RF signals produced by base stations."

<http://www.who.int/mediacentre/factsheets/fs304/en/index.html>

However, it is a fact that there are several studies on your own WHO database that specifically show health problems around base stations. I am going to list **all** the studies on mobile phone base stations I have been able to find, in date order.

(1) Santini et al, 2002 (France): 530 people living near mobile phone masts reported more symptoms of headache, sleep disturbance, discomfort, irritability, depression, memory loss and concentration problems the closer they lived to the mast.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=772>

(2) Navarro E, 2003 (Spain): Statistically significant positive exposure-response associations between field intensity and fatigue, irritability, headaches, nausea, loss of appetite, sleeping disorder, depressive tendency, feeling of discomfort, difficulty in concentration, loss of memory, visual disorder, dizziness and cardiovascular problems. Two different exposure groups also showed an increase of the declared severity in the group with the higher exposure.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=1122>

(3) Bortkiewicz et al, 2004 (Poland): Residents close to mobile phone masts reported more incidences of circulatory problems, sleep disturbances, irritability, depression, blurred vision and concentration difficulties the nearer they lived to the mast.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=560>

(4) Wolf et al, 2004 (Israel): A four-fold increase in the incidence of cancer among residents living within 300m radius of a mobile phone mast for between three and seven years was detected.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=970>

(5) Eger et al, 2004 (Germany): A three-fold increase in the incidence of malignant tumours was found after five years' exposure in people living within 400m radius of a mobile phone mast.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=1226>

(6) Hutter et al, 2006 (Austria): A significant correlation between measured power density and headaches, fatigue, and difficulty in concentration in 365 subjects.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=1626>

(7) Abdel-Rassoul et al, 2007 (Egypt): Residents living beneath and opposite a long-established mobile phone mast reported significantly higher occurrences of headaches, memory changes, dizziness, tremors, depressive symptoms and sleep disturbance than a control group.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=1645>

(8) Oberfeld et al, 2008 (Austria): All subjects reported various symptoms during exposure including buzzing in the head, heart palpitations, unwellness, light-headedness, anxiety, breathlessness, respiratory problems, nervousness, agitation, headache, tinnitus, heat sensation, and depression.

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=1463>

The WHO database also contains an Irish study, Catney et al, which claims that a study of cancer around a very contentious mast, which was actually destroyed by residents, showed a lower cancer rate than the norm for Ireland:

<http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=1144>

This study -- if closely examined -- was not only never published or peer-reviewed, but is actually marked "Confidential", and was clearly prepared under highly abnormal circumstances where a serious crime had been committed, and people who might have been affected by the mast had every reason not to come forward for fear of being identified as criminal suspects in the mast's destruction; so this study can be rejected as having any credibility.

<http://www.qub.ac.uk/research-centres/nicr/FileStore/Filetoupload,25236,en.pdf>

I am not aware of any other mobile phone mast studies on the WHO database, having searched for all studies with "mast", "base station" or "tower", although there are other studies with broadcast masts, which I am ignoring, although many of them report health problems; perhaps you can enlighten me if there are others specifically on mobile phone masts.

Thus it appears that fully 100% of the peer-reviewed mast studies on the WHO's own database show a consistent pattern of health problems, including raised cancer rates. The WHO in its commentary seems to find fault with most of the studies in one way or another, but it has to be accepted that at present, the peer-reviewed scientific research is completely unanimous: **there is a consistent pattern of health problems around mobile phone base stations.**

There are other studies, such as the Skrunda radar station study in Latvia, which show a similar pattern of illnesses with microwave exposure, but I am not counting this as a base station study.

In light of this, it is extremely puzzling that the World Health Organisation can state that: "From all evidence accumulated so far, no adverse short- or long-term health effects have been shown to occur from the RF signals produced by base stations."

WHO should rather state: "**All** the peer-reviewed scientific evidence accumulated so far is **unanimous** that there is a consistent pattern of health problems associated with base stations, including raised cancer rates."

I will remind you of the paper presented by Prof Michael Kundi at the SABS/STUK conference on a "precautionary" approach to the science, in which he said that indications that there **may** be a problem should be taken particularly seriously and earmarked for further investigation.

In this light, I also draw your attention to an observation by Prof Dariusz Leszczynski of STUK, co-convener of the conference, in a recent blog, about ICNIRP's protocols for evaluating research:

"It is not only my personal observation that the negative studies seem to get accepted as such, without too much scrutiny, whereas the positive studies are examined in every detail to determine why the result is positive. Hence, the positive studies are not treated equally with the negative ones, even though also the negative studies might include erroneous results or interpretations."

<http://betweenrockandhardplace.wordpress.com/>

In other words, it seems that ICNIRP (and therefore WHO, which recommends ICNIRP's guidelines) deliberately take the exact opposite approach to the very sane and rational one advocated by Prof Kundi, which is that where issues of health are concerned -- especially in that over the last 15 years we have begun irradiating mass populations with microwaves, which has never happened before in human history -- we should take particular care to highlight indications of possible problems now, which may turn into major public health issues later.

I personally cannot see how ICNIRP's attitude can possibly be defended on any humane or even scientific grounds. Paolo Vecchia, Chairman of ICNIRP, spoke at the Radiation Research Trust conference in London in September 2008, and said the ICNIRP guidelines are not mandatory prescriptions for safety, the "last word" on the issue or defensive walls for industry. But I can assure you that in South Africa, these guidelines are serving precisely as an impregnable "defensive wall" for the industry against the public, with no recourse to any authority whatsoever if health problems present near a mast, and no health grounds on which one can object to a mast.
<http://scienceblog.cancerresearchuk.org/2008/07/25/do-mobile-phones-cause-cancer>

Worldwide, scientists and health practitioners have urged particular caution with exposing children, with developing nervous, hormonal and immune systems, to microwaves. Here in Johannesburg, schools seem to be the preferred site for base stations, with scores of schools with cellphone masts in their playgrounds. Despite strenuous objections -- which are all ignored because we have no health regulations, and follow WHO's recommendations -- operators continue to site base stations in schools and kindergartens. At a public meeting for a mast at a girls' school in Johannesburg, held in the school hall on a holiday without a single representative of the school, or a single parent or child at the school in attendance, the agent of the operator MTN aggressively told the crowd: "**We don't have to bother with health.**" And I told the meeting that he was perfectly correct, because there are no health regulations in force. That mast has been approved. Not one word was said about any of the scores of objections from members of the public to this mast by the government department that authorises such structures.

WHO states in a fact sheet:

"Siting base stations near kindergartens, schools and playgrounds may need special consideration. Open communication and discussion between the mobile phone operator, local council and the public during the planning stages for a new antenna can help create public understanding and greater acceptance of a new facility."
<http://www.who.int/mediacentre/factsheets/fs193/en/>

This is most interesting statement which bears close examination. One thing I can assure the World Health Organisation, from having participated in several public meetings over proposed base stations, is that open communication and discussion invariably results in an overwhelming public display of antipathy towards a mast.

To give an example, here are minutes from a meeting (which I did not attend) in which you will find no fewer than eight times the statement, "There was uproar from the residents": <http://www.lokisa.co.za/pdf/Final%20Minutes%20of%20meeting.pdf>

To give another example, here is a news report of another public meeting (not attended by me) where a resident tells the operator's representative: "If I get cancer I will walk to the ends of the earth to kill you."

<http://www.dispatch.co.za/2006/11/02/Easterncape/brael.html>

That is not what I would call "public understanding and greater acceptance of a new facility". And in fact, the operators strive to avoid public meetings wherever they can in South Africa, despite the fact that they are supposed to adhere to WHO guidelines, which recommend such open discussion.

However, if the WHO's statement is analysed carefully, it will be seen to be clearly biased towards helping "create greater acceptance of a new facility".

I have to ask you, with all respect: **why** is the World Health Organisation, which is dedicated to public health, advocating "greater acceptance" of new base stations, especially in schools, kindergartens and playgrounds? Why does WHO have an interest in actively promoting acceptance of microwave technology? How is this part of WHO's brief as a public health body? I would most sincerely appreciate an answer to this question, because on the face of it, WHO is openly biased towards the operators in trying to facilitate "greater acceptance" of base stations -- even in schools and kindergartens, against best international practice.

The World Health Organisation seems to feel that despite hundreds of scientific papers showing biological and health effects from low-level pulsed microwave radiation, what the public will receive from a base station "must" be so low that safety considerations can be waived.

I draw your attention to an article written by Dr Andrew Goldsworthy of Imperial College in London, *Why mobile phone masts can be more dangerous than the phones*, in which he notes that our bodily mechanisms for dealing with radiation "are 'designed' only for intermittent use because they disrupt normal metabolism and are expensive in bodily resources and energy."

This kind of protective mechanism is more appropriate to dealing with short-term, intermittent electrical radiation exposure, as experienced during an electrical storm in nature, or talking on a handset in terms of modern technological exposures.

However, **constant** exposure to low-level radiation -- as experienced when living and sleeping near a mast, which is always radiating -- is another story altogether, and as Goldsworthy says: "Day and night irradiation from mobile phone masts, which run continuously, [gives] little or no chance to recover. In the long term, this is likely to cause chronic fatigue, serious immune dysfunction leading to an increased risk of cancer, and many of the other symptoms frequently reported by people living close to mobile phone base stations."

<http://bemri.org/archive/hese-uk/en/niemr/cellfeedback.php>

This is an absolutely logical explanation for the unanimous findings of research around masts, which is that there is a consistent pattern of reported health problems, including chronic fatigue.

Here in Johannesburg, we have interviewed scores of people living near masts, and have found exactly the same syndrome of illnesses reported in the research, including several possible cancer clusters. Many people have told us that their symptoms disappear when they move away from a mast. We have even seen doctors' letters where leukaemia seems to go into mysterious remission when a sufferer moves away from a mast.

Coming to the mast which has precipitated this appeal to you, the iBurst mast in Craigavon in Johannesburg: within days of the mast becoming active, a host of health problems became apparent. They include: severe and maddeningly itchy rashes (I will send you photographs of one sufferer, who says she has never had a rash in her life before this); nausea, gastric upsets and vomiting; severe headaches; sleep disorders; severe fatigue; dizziness; tinnitus; and burning and prickling sensations on the skin. Symptoms including rashes have been reported in children under two years of age, so they cannot easily be dismissed as "psychosomatic".

Other problems have included bees swarming and disappearing within days of the mast becoming active; several dogs vomiting in unprecedented ways and scratching themselves desperately, with veterinary surgeons unable to find anything wrong; and previously perfectly healthy plants apparently scorched, withering and dying, and actively bending away from the mast.

An article about this mast on October 6 in the major Johannesburg daily newspaper *The Star* (which story did not appear on the internet, but which I will attach separately) reports: "iBurst CEO Jannie van Zyl says he's commissioned an independent company to test electromagnetic radiation levels in the area. If they are found to be above World Health Organisation regulations, action will be taken."

We are quite prepared to accept that the radiation levels from this mast fall below the ICNIRP guidelines; but we are **not** prepared to accept that the health problems which are occurring, and have in one case literally forced people from their beautiful home 50 metres from the mast, are "imaginary". These problems are very real, and you can see here that the operators are relying solely on the World Health Organisation for permission to continue radiating these residents at close range.

Emilie, I myself visited this house near the mast, and within minutes of entering felt dizzy and developed a pounding headache in the back of my skull. I cannot ever recall having a headache like this. My skin was burning from within half an hour of being in the house, a very distinct sensation I have sometimes felt near masts, but worse than I have ever experienced before, and hours later my face was still distinctly flushed. Even the next day I could feel this burning sensation, which lasted about 18 hours. I absolutely refuse to accept that these are "psychosomatic" symptoms; I merely tell you this to say that I personally felt extremely uncomfortable near this mast and have no doubt that it is having a severe negative health impact on the residential neighbourhood it is located in, as evidenced by the many similar complaints coming from residents.

We have not conducted a proper health survey, we do not have the resources at all, and we cannot find any authorities in South Africa who are prepared to take these

issues seriously. Because there are no health regulations, they seem to feel there cannot be any health problems!

This mast is but one of thousands in South Africa, and we can point to scores of other severe health problems we have investigated around masts, including deaths from cancer and Alzheimer's disease which seem clearly linked to mobile base stations.

However, in this case with the iBurst mast we are dealing with broadband technology, and research has indicated that 3G radiation may be particularly harmful to health. The first research we saw on this was from the Dutch government, which reported that people exposed to broadband radiation at base station levels experienced significantly worse symptoms than with ordinary cellphone radiation, including "tingling sensations", nausea and headaches -- exactly what is being reported near this iBurst broadband mast: <http://news.bbc.co.uk/2/hi/health/3157676.stm>

Prof Frans Adlkofer, who was also at the SABS/STUK conference and there repeated the findings of the EU's Reflex study of severe genetic damage and micronuclei formation from low-level cellphone radiation, has also put out a stringent warning about 3G technology and health, saying there is no doubt that it is "ten times more genotoxic" than ordinary cellphone radiation and raises the risk of cancer: <http://www.next-up.org/pdf/PressReleaseConcernPrFranzAdelkoferVerumFoundation06102007.pdf>

Prof Adlkofer also repeats what has been said by others, that the mass exposure of populations to microwave radiation is an "uncontrolled and unplanned field experiment" on humans. You will see in the press article on this iBurst mast that the CEO of the company says, "Every study I've read says it's a very complex environment and further studies should be done".

The Bill of Rights of the South African Constitution guarantees citizens the right "not to be subjected to medical or scientific experiments without their informed consent": http://www.doj.gov.za/legislation/constitution/20081210_cn_2.pdf

Not only are these members of the public being used in an "uncontrolled field experiment" on humans that seems to be making them severely ill, but no one in authority is making the slightest attempt here to collect the results of this "experiment". Indeed, they go to great lengths to look the other way.

The Constitution also guarantees us the right to a healthy environment, and to "bodily and psychological integrity", both of which rights are also being violated by the operators, especially given that it has been shown in several studies that pulsed microwaves affect brainwaves at levels many million times below the ICNIRP guidelines.

The Bill of Rights also gives special protection for children, stating: "A child's best interests are of paramount importance in every matter concerning the child", and I am particularly concerned with the rights of children being exposed to this radiation.

Given that the World Health Organisation is both the *de facto* and the *de jure* authority in this regard in South Africa, we are in the strange position of having to

appeal most sincerely to you in order to try to get our constitutional rights enforced in this country.

We are dealing with another situation in the Johannesburg suburb of Blairgowrie, where "smart meters" installed by the utility City Power in a pilot study malfunctioned, and by the manufacturer's own admission were accidentally triggered into radiating simultaneously, causing massive interference with hundreds of security devices in the neighbourhood which worked on the same frequency (433MHz).

This radiation "event" also coincided with a storm of health problems; in a very cursory survey we logged over 70 complaints, mainly featuring severe rashes and skin lesions; eye inflammations and visual disturbances; bad headaches; sleep disorders; severe fatigue; memory and attention problems; high blood pressure; and gastric upsets, which symptoms all subsided when the meters were turned off. The meters are selectively being turned on again, and the illnesses are returning. This is another major apparent epidemic of microwave radiation-induced illness, and we cannot find anyone here to do a proper health inquiry. There is no industry or agriculture in the area, no signs of chemical or agricultural discharges or other pollution, no reported problems with water quality, and no other apparent cause of this epidemic of illnesses, which arose across the precise geographical area covered by these "smart meters", and coincided exactly with major microwave RF interference from the meters to electronic security devices.

Legislation in South Africa states that all homes on the electrical grid must have "smart meters" installed by January 1, 2012, so we are extremely concerned at the severe health problems which emerged during this pilot study. No investigation has yet been initiated into these reported health problems, yet these same smart meters are now being rolled out across Johannesburg.

I am therefore appealing to the World Health Organisation to take its responsibilities seriously, since South Africans are openly told by our Department of Health that no action will be taken to protect us unless the WHO says something. We need a proper investigation into what is going on here, because people are being made severely ill, are being driven out of their homes, and are dying of what appear to be radiation-induced illnesses. And we cannot get any protection from any authority here. As I stated at the plenary session of the SABS/STUK conference, not a single authority, not a single doctor in South Africa has given a single word of warning, a word of precaution about microwave exposure. We have little children speaking for hours at a time on cellphones, without any sense that there might be a problem.

I trained as a physics teacher, and lectured physics here for many years. I did my master's degree on language and attention in the science classroom in both black and white schools in the 1980s. I am not aware of any other classroom studies of "attention" in South Africa at that time. I can honestly say that I did not see one single case of anything that remotely resembled "attention deficit disorder" in children in 15 years of teaching and research before cellphones arrived. ADD is now an epidemic in South Africa, with teachers lining up children at break time to give them Ritalin. This is a major change, and I am personally certain that cellphone radiation is largely to blame. This is destroying the futures of our children, and we urgently need at least some cognisance of the problem, and the possible link with radiation, on the part of

the responsible authorities. And this means the World Health Organisation, which is essentially the sole authority with regard to "non-ionising" radiation and health in South Africa. I truly beg you to take this huge responsibility seriously, and make an investigation into this situation in South Africa.

Prof Olle Johansson of Karolinska Institute in Sweden has shown in several peer-reviewed papers that people in rural areas, where masts and handsets have to operate at higher power levels, present increased levels of illnesses that may be associated with radiation, including Alzheimer's disease:

<http://home.swipnet.se/Uncover/Papers/1997/1997abstr.pdf>

<http://www.scribd.com/doc/14855171/EMF-and-Alzheimer-mortality>

This is relevant to Africa as a whole, and it is a fact that South Africa is given responsibility by WHO for the whole of Africa with regard to RF protection -- ironic, since South Africa has no regulations in place, and does not lift a finger to protect its own citizens in this regard. With Africa's wide-open spaces, dispersed populations and lack of fixed-line infrastructure, we now have far more cellphones than landlines, and we are at the most risk of illness if there turns out to be a problem; and yet we have the least protection.

So this is really a continent-wide problem, with yourselves as basically the sole authority on the landscape; and again, I appeal to you to take your responsibilities seriously, and come make a proper investigation on the ground as to what is happening here. What I have described is not even the tip of the iceberg.

Yours sincerely

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Appendices to be forward by e-mail:

1. Article in *The Star* newspaper, October 6, 2009: *iBurst mast blamed for 'nightmare'*
2. Photographs of rashes reported in Craigavon, Johannesburg, near iBurst mast
3. Photographs of rashes reported in Blairgowrie, Johannesburg, near microwave-based electrical "smart meters"