COMMENT ON THE CITY OF CAPE TOWN DRAFT
(Dated January 2011)
ON TELECOMMUNICATION INFRASTRUCTURE POLICY
(PERTAINING TO HEALTH, LAND USE, ENVIRONMENTAL AND HERITAGE MATTERS)

PREPARED BY THE
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1 POLICY REVIEW

The review of the policy as noted in points 1.1-1.3 is essential due to the continued roll-out of various forms of wireless technology in addition to radio telecommunication services and TV broadcast signals which are increasing to include digital signals in addition to the current analogue signals.

The new technologies that need to be noted include WiFi, WIMAX, IBurst, wireless telephone systems such as Neotel and the Telkom wireless telephone service in addition to DSTV mobile. Backhaul links and their placement, heights and intensity are a key factor.

There has been a major increase in the number of service providers for both mobile and Wifi/WiMax/UMTS since policies were last reviewed.

Smart meters should be included in this policy and not be considered for use.

Digital TV signals are to be investigated prior to mass roll-out.

Tetra installations need to be accounted for too as they have been prohibited in some countries.

It should be noted that there has been no health or safety testing done in South Africa for any of the frequencies or applications prior to roll-out.

The policy has not discussed modulations/pulse rates for each of these applications (in addition to their frequencies) which are considered significant according to international research and are considered to have an impact on the biological health of human beings.

Dr Blackman, past president of the Bioelectromagnetics Society, published a paper in Pathophysiology - “Evidence from ELF and RF studies supporting more inclusive risk identification and assessment”. Section 1.2. states: “Modulation signals are one important component in the delivery of EMF signals to which cells, tissues, organs and individuals can respond biologically.” He also mentions that “more recent studies of modulated RF signals report changes in human cognition, reaction time, brainwave activity, sleep disruption and immune function.” Dr Blackman includes the following sentence within the conclusion of his paper: “Current standards have ignored modulation as a factor in human health impacts, and thus are inadequate in the protection of the public in terms of chronic exposure to some forms of ELF-modulated RF signals. The current IEEE and ICNIRP standards are not sufficiently protective of public health with respect to chronic exposure to modulated fields (particularly new technologies that are pulse-modulated and heavily used in cellular telephony). The collective papers on modulation appear to be omitted from consideration in the recent WHO and IEEE science reviews. This body of research has been ignored by current standard setting bodies that rely only on traditional energy-based (thermal) concepts.”
Barrie Trower, a retired military scientist was tasked with debriefing spies following the Cold War. Various pulse rates were known to have specific effects in the biological aspects of human subjects.

In addition it should be noted that GSM 900 MHz has been noted in scientific studies to be more bioactive than DCS 1800 MHz due to the higher intensity of GSM 900 MHz antennas compared to DCS 1800 ones. All service providers in South Africa use both these but Cell C has migrated to the 900 band exclusively. The decrease in reproductive capacity due to induced cell death has been found in experiments with both types of cell phone telephony. Observations and findings to be noted in the Blackman and Panagopoulos papers.

Dr Professor Adlkofer found following the interphone studies that “The DNA strand breaks occur at only 1/40th of the guideline limits. Hence, UMTS signals are almost ten times as active as GSM signals “

These facts need to be considered when checking how many types of signals are already being transmitted through homes and the impact if more are to be added.

**ADDENDUM ONE**

**Barrie Trower – retired military scientist on effects of modulations**

Dr Carl Blackman – Cell phone radiation: Evidence from ELF and RF studies supporting more inclusive risk identification and assessment.

Panagopoulos – Effects of Mobile Telephony Radiation on a model organism.

Professor Franz Adlkofer, Verum Foundation. – Press release on UMTS signals.

**2 MANDATE: RESPONSIBILITIES AND POWERS OF COUNCIL**

The Constitution (Section 24) states that everyone has the right to an environment that is not harmful to their health and well being and that everyone has the right to have the environment protected for the benefit of present and future generations through reasonable legislation and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The fact that this has been noted in the policy is important, however to date this had been ignored by government and officials in South Africa in the matter of wireless telecomm transmitting infrastructures and the effects.

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":

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"
A recent letter from world renowned Professor Olle Johansson of the Karolinska Institute to the Minister of Health and the Minister of Environmental Affairs of South Africa states:

“I encourage governments to adopt a framework of guidelines for public and occupational EMF exposure that reflect the Precautionary Principle. The Precautionary Principle states when there are indications of possible adverse effects, though they remain uncertain, the risks from doing nothing may be far greater than the risks of taking action to control these exposures. **The Precautionary Principle shifts the burden of proof from those suspecting a risk to those who discount it — as some nations have already done.** Precautionary strategies should be based on design and performance standards and may not necessarily define numerical thresholds because such thresholds may erroneously be interpreted as levels below which no adverse effect can occur.”

**ADDENDUM TWO**

**Letter to the South African Government from Professor Olle Johansson**

**Paper by Dr Magda Havas for the City of San Francisco (who decided not to WiFi their city)**

As we stand now, the technology we are being subjected to has not been proven safe and therefore it is essential that measures be taken to protect the citizens of South Africa.

Antennae and base stations are being placed on residential buildings, next to homes and in school grounds. In addition WiFi/WIMAX now blankets Cape Town City Centre and The V&A Waterfront with no thought of the impact to people being exposed 24/7 especially children, women, the elderly, those already immune compromised, pregnant women and electrosensitive individuals. Concerns of this were raised before the roll-out but ignored and no public participation has been involved in the process. The Precautionary Principle has been ignored and people are having a myriad of frequencies and pulse rates through their homes.

There are many electrosensitive and affected people who have reported into the foundation whose lives have been sadly and dramatically changed due to the lack of control and health regulation on the matter. ( If necessary some of those affected would be prepared to present to Council ) Many of these have appealed to the Department of Health/Leon du Toit but they have been ignored and their cases not even investigated or recorded.

It is hoped that Council considers these factors in the rectifying or planning of Telecomm installations.

In points 2.2 and 2.3 it is noted that the installation of TI falls within the ambit of municipal planning. Who is in fact then monitoring the impact?

In point 2.5 it is noted the Council’s obligation to administer the National Building Standards and Building Regulation Act 103 of 1977 particularly Section 7 of the act, which states that Council must be satisfied that buildings or structures are not dangerous to life or property.

Specific points from section 7 also include:
S 7 (1) (b) (ii) (aa) (ccc) If a local authority...is satisfied that the building to which the application ... relates... will probably or in fact be unsightly or objectionable...such authority shall refuse to grant its approval....... 

S 7 (b) (ii) (bb) If a local authority...is satisfied that the building to which the application ... relates... will probably or in fact be dangerous to life or property...such authority shall refuse to grant its approval....... 

S 10 (1) (a) (ii) If any building...in the opinion of the local authority.... will be unsightly or objectionable... such local authority may by notice in writing...prohibit the person erecting such...... 

S 10 (1) (a) (ii) If any building...in the opinion of the local authority.... will probably or in fact derogate from the value of the adjoining or neighbouring properties... such local authority may by notice in writing...prohibit the person erecting such..... 

In addition communities and homeowners are not being considered as to the loss of property value with the placement of base stations near homes or antennae on residential buildings. It is a well known fact that people will not buy homes next to cell towers and the loss of value can be between 35-50%. 

ADDENDUM THREE 

Letters and comments from Estate Agents 

Of major concern is that there is no national or regional grid indicating all existing base stations/ cell masts/antennae/roof installations / high sites/Broadcast towers drawn up in any government department including the Departments of Health or Environment or GDARD (who have signed these masts off for many years) or ICASA.

It should be imperative that all service providers make available to Council a grid of their entire network (legal and illegal) in order that a full assessment be done prior to any further approvals being given. This would need to include rooftop or building installations.

This would enable a geographical overlay of all service providers’ installations on a map both nationally and regionally.

In point 2.6 the economic wellbeing of the municipal area is also reliant on the mental and physical well being of its inhabitants.

Point 2.7 is imperative and essential and it is hoped that it will be enforced as once again the Precautionary Principle of NEMA has not been enforced to date. South Africa also signed The Precautionary Principle at the Earth Summit in Rio in 1992, which was reinforced in 2002
3 STATUTORY FRAMEWORK AND COUNCIL APPROVALS

3.1.1 ICASA’s clear role and efficiency need to be assessed. In many cases monitoring is not being done or even undertaken when requested.

3.1.2 The NDOH and the Directorate of Radiation Control adhere to outdated standards (1998) and have ignored latest scientific information including the latest release from the WHO/IARC that radiofrequency electromagnetic fields are possibly carcinogenic. This statement has been welcomed as long overdue by many scientists and researchers worldwide who have indicated this for over 40 years.

ICNIRP and its levels are based on 6 minutes of thermal heating on an adult male and do not include any guidelines that protect those being exposed 24/7 by a mass of frequencies and modulations. The biological non-thermal effects are not provided for, hence the fact that many countries worldwide have ignored ICNIRP and instituted their own guidelines and levels.

In fact it should also be clearly noted that neither ICNIRP nor WHO have declared or committed to a safe level for children. The WHO told the EU it had only started observing effects on children in 2009, due to comment in approx 2024. We are currently therefore not protecting our children in South Africa to exposure.

Whilst the NDOH and the industry glibly quote ICNIRP, it appears all concerned have not read the full document. Herewith are passages directly from ICNIRP 1998 General Approach Guidelines:

page 546:

People being protected

Different groups in a population may have differences in their ability to tolerate a particular NIR exposure.

For example, children, the elderly, and some chronically ill people might have a lower tolerance for one or more forms of NIR exposure than the rest of the population. Under such circumstances, it may be useful or necessary to develop separate guideline levels for different groups within the general population, but it may be more effective to adjust the guidelines for the general population to include such groups.

Some guidelines may still not provide adequate protection for certain sensitive individuals nor for normal
individuals exposed concomitantly to other agents, which may exacerbate the effect of the NIR exposure, an example being individuals with photosensitivity. Where such situations have been identified, appropriate specific advice should be developed—within the context of scientific knowledge.

Page 546/7

Approaches to risk management

The ICNIRP approach to providing advice on limiting exposure to NIR necessarily requires well-based scientific data related to established health effects. When, in the absence of sufficient scientific evidence for the existence of a suspected adverse health effect, there are calls for protective measures, a number of approaches to risk management have been applied. These approaches generally center on reducing needless exposure to the suspected agent. However, ICNIRP emphasizes the need to ensure that the practical manner in which such approaches are applied should not undermine or be to the detriment of science based exposure guidelines. ICNIRP notes the clarification afforded by the European Commission (CEC 2000; Foster et al. 2000) on the practical application of one such approach, the Precautionary Principle. For example, this includes the degree to which the Principle is based on the science (requiring an evaluation of risk research), and the provisional nature of measures pending further acquisition of scientific data.
ADDENDUM FOUR

ICNIRP General Approach Guidelines 1998 as referred to by NDOH.

Paolo Vecchia, Chairman for ICNIRP presented at the RRT (Radiation Research Trust) conference in September 2008. In his presentation he made it very clear that: ‘the ICNIRP guidelines are neither mandoratory prescriptions for safety, the “last word” on the issue nor are they defensive walls for industry or others’.

WHO recognizes electrosensitivity - “The symptoms are certainly real and can vary widely in their severity. Whatever its cause, EHS can be a disabling problem for the affected individual”

ADDENDUM FIVE

WHO – Electrosensitivity

Professor Olle Johansson – Electrosensitivity

Professor Dominique Belpomme at 8th National Congress on Electrosmog, Berne, 2011

3.1.3 It appears according to reports that service providers are reducing masts to 15 metres to bypass most formalities. Who will be signing the masts off? Will it be council or DEADP?

3.2.3 Outdoor signage is being used to disguise masts and antennae and the public are unaware that it is indeed being done. What procedure is being followed in this matter as to public participation and distance from homes.

4 SCOPE AND APPLICATION OF POLICY

No comment

5 APPROACH, PURPOSE, OBJECTIVES AND OUTLINE OF THE POLICY.

5.1.1 Fixed line options should be maintained and expanded as they are the safer option. ADSL hardwired connectivity through fixed lines to be supported. Optic fibre from backbone to final destination is another safer option, however this is not to have the last mile access using WiFi or WIMAX. (The foundation is receiving reports of those that are very sensitive to broadband, WiFi and WIMAX)

5.1.2 Sensitive siting should include a minimum distance of 600 metres from any residential home, hospital or school, with a survey being done first to measure the levels and numbers of frequencies that are already being experienced in those homes in the area.

Russia dictates a 2km distance as does Salzburg which is from a weak cell tower with a 10 w transmit power and 4.46 km with a 50W transmit power. A controlled and capped level of what is transmitting off the tower would need to be maintained and monitored.
**ADDENDUM SIX**

Salzburg – safe distances

Diagrams of radiation patterns from a cell tower antenna and antennae

Long term studies around cell masts have shown health effects and increased cancers. (Two RF tower studies are also included.

1) WHO (World Health Organisation) has on their database (2006) a pie chart where 80% of the epidemiological studies published showed a significant increase in the adverse health symptoms being analysed from base stations which included cancers and microwave syndrome. (Page 266)
2) Firstenberg (Firstenberg, A 2001) compiled a list of studies showing biological effects at levels far below most guidelines for radio frequency radiation.
3) Santini et al

*Pathol Biol (Paris) [Pathologie Biologie (Paris)]* 2002; 50: 369 – 73

showed many of these effects in a study of residents within 300 metres of a cell mast.

**Epidemiological studies-Cell Phone Antennas: Human Exposure**

4) A German study by a team of local medical doctors in Naila – Eger H et al with data from over 10 years, discovered a threefold increase in new malignancies in people living up to 400m from a mast after five years exposure when compared to people living further away in the same town. The study was called for by Wolfram König, President of the Federal agency for radiation protection.
5) Barrie Trower by 2006 had logged over 200 leukaemia clusters around cellphone masts, each cluster consisting of more than ten children under the age of 11, in the UK, Spain and France. Most of these children died.

6) A study by doctors at the Kaplan Medical Centre, Israel, discovered a fourfold increase in cancer within 350m after long term exposure to a phone mast and a TENFOLD increase specifically in women. (1. The Dermatology Unit, Kaplan Medical Center, Rechovot, and the Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, ISRAEL.2. The Pediatric Outpatient Clinic, Hasharon Region, Kupat Holim, ISRAEL.) Published in International Journal of Cancer Prevention Volume 1, No. 2, April 2004.

7) Roland Stabenow, the head of cancer registry in Berlin, informed the residents of Steinbach-Hallenberg that there was a 7 fold increase in breast cancer amongst people in their area living near the cellular antennas. German doctors signed The Bamberger Appeal.

8) A study ( Hallberg 2002) looked at “before “ and “ after” the introduction of frequency modulated transmitters across Estonia. He identified a steep increase in cancer mortality after transmitters were allowed across this country.

9) A study by Blake Levitt and Dr Henry Lai covered several studies on base stations.

10) A study in January 2009 by the municipality of the Bavarian town of Selbitz found a correlation of symptoms found near a mast at 1.2 v/m and another German study where a mean value of 0.07 v/m was used. A significant correlation was found dependent on dose-effects for insomnia, depressions, cerebral symptoms, joint illnesses, infections, skin changes, heart and circulation disorders, and disorders of the optical and acoustic sensory systems and the gastro-intestinal tract with objectively determined locations of exposure, which can be related by the influence of microwaves on the human nervous system. This work, which has been carried out without external resources, provides a protocol for surveys of medical practitioners and municipality administrations to estimate possible health effects of mobile telephone basic stations situated near population residents.

Source: http://www.avaate.org/article.php3?id_article=1988


Study for the Netherlands Ministries of Economic Affairs, Housing, Spatial Planning and the Environment, and Health, Welfare and Sport

“Effects of Global Communications System Radio-Frequency Fields On Well Being and Cognitive Function of Human Subjects With and Without Subjective Complaints”

Found significant effects on wellbeing, according to a number of internationally-recognised criteria (including headaches, muscle fatigue/pain, dizziness, etc.) from 3G mast emissions well below accepted ‘safety’ levels (less than 1/25,000th of ICNIRP guidelines). Those who had previously been noted as ‘electrosensitive’ under a scheme in that country were shown to have more pronounced ill-effects, though others were also shown to experience significant effects.
12) The microwave syndrome – further aspects of a Spanish study

Oberfeld Gerd(1), Navarro A. Enrique(3), Portoles Manuel(2), Maestu Ceferino(4),
GomezPerretta Claudio(2)

Public Health Department Salzburg, Austria. University Hospital La Fe. Valencia, Spain

Department of Applied Physics, University Valencia, Spain. Foundation European Bioelectromagnetism (FEB)
Madrid, Spain

Presented at an International Conference in Kos (Greece), 2004

This study found significant ill-health effects in those living in the vicinity of two GSM mobile phone base stations. They observed that:

“The strongest five associations found are depressive tendency, fatigue, sleeping disorder, difficulty in concentration and cardiovascular problems.”

As their conclusion the research team wrote:

“Based on the data of this study the advice would be to strive for levels not higher than 0.02 V/m for the sum total, which is equal to a power density of 0.0001 µW/cni2 or 1 µW/m2, which is the indoor exposure value for GSM base stations proposed on empirical evidence by the Public Health Office of the Government of Salzburg in 2002.”

13) Austrian Study

The radiation of a cell phone base station at a distance of 80 metres causes significant changes of the electrical currents in the brains of testees (measured by electroencephalogram, EEG). All the testees said they felt unwell during the radiation, some of them seriously.

That is the result of an investigation by a team of Austrian scientists. They measured alpha 1 (8 to 10 Hz), alpha 2 (10 to 12 Hz) and beta waves (13 to 20 Hz). A small density of GSM 900 and GSM 1800 radiation already caused several significant changes in these three frequency ranges. This means the body is stressed – temporarily this may have some positive effect, in the long run however stress certainly reduces the quality of life, capacity for work and state of health.

The results of the research was confirmed by replication. The research was financed by Land Salzburg in Austria. The testees were nine women and three men between 20 and 78, who considered themselves 'electrosensitive'. They were invited to sit in a chair, eyes covered and ears plugged. Of course they were not aware of the sequence of the tests.

The side of the room directed at the cell phone base station was shielded against radiation, except for a small part which could be (un)shielded easily. In the first phase, the radiation density near the head was 26 mikroWatt/m2, in the second phase 3327 mikroWatt/m2 and in the third phase 26 mikroWatt/m2 again. Several other environmental parameters were measured to be sure they could not influence the results, such as
radiation by television and FM-radio, noise, CO2, temperature, relative humidity, low frequency magnetic fields and soherics (electrical discharges in the atmosphere, possibly causing radiation).

During the second phase the parameters of all the brainwaves, measured by EEG, changed significantly. Afterwards the testees were asked to describe their experiences. All of them felt unwell during the second phase. They reported symptoms like buzzing in the head, palpitations of the heart, unwellness, lightheadedness, anxiety, breathlessness, respiratory problems, nervousness, agitation, headache, tinnitus, heat sensation and depression.

According to the scientists, this is the first worldwide proof of significant changes of the electrical currents in the brain by a cell phone base station at a distance of 80 metres. It has been scientifically established before that the radiation of cell phone base stations leads to unwellness and health complaints.

The scientists involved were Dr. Med. Gerd Oberfeld (Land Salzburg, dept. of environmental medicin), Dr. Hannes Schimke (Salzburg University, EEG-measurements, psychofisiology, statistics) and Prof. Dr. Günther Bernatzky (Salzburg University, neurodynamics and neurosignalling). The research was supported by Dr. Med. Univ. Gernot Luthringshausen (permanent member of the ethical commission of Land Salzburg, neurology and psychiatry).

14) A scientific study published in the journal Neurotoxicology finds that people who live around mobile phone base stations (cell towers) are at risk for developing neuropsychiatric problems and changes in neurobehavioral function. The prevalence of neuropsychiatric complaints as headache (23.5%), memory changes (28.2%), dizziness (18.8%), tremors (9.4%), depressive symptoms (21.7%), and sleep disturbance (23.5%) were significantly higher among exposed inhabitants than controls: (10%), (5%), (5%), (0%), (8.8%) and (10%), respectively (P < 0.05). Exposed inhabitants exhibited a significantly lower performance than controls in one of the tests of attention and short-term auditory memory. The authors say revision of standard guidelines for public exposure to RER from mobile phone base station antennas around the stations is recommended.


NeuroToxicology 28 (2007) 434–440

15) New study: direct link to 4,924 cancer deaths from cellular antennas radiation.

May 17, 2011 The electromagnetic radiation emitted by transmitting cell phone antennas is linked to the occurrence of some types of cancer, according to a study by Brazilian researchers.

The study established a direct link between cancer deaths in Belo Horizonte, the third largest city, with the antennae of the mobile telephone network, reported in Science Hoje site, the news portal of the Brazilian Society for Progress Science (Sociedad Brasileña para el Progreso de la Ciencia.)
The research was conducted by scientists at the Federal University of Minas Gerais (UFMG), Brazil’s southeastern state whose capital is Belo Horizonte. The results give a warning in a country where, according to the latest data available, at least one person has a cell phone in 82 percent of the residences.

**NOTE:** These are the only studies known of that specifically consider the effects of masts on people. **All these studies show clear and significant ill-health effects. There are no known long term studies relating to health effects of masts that do not show such ill-health effects.**

“In this respect, any statement by industry or official sources that claims (or suggests) that:

(a) There is no evidence of ill-health effects from masts;

or

(b) The overwhelming evidence is that masts do not cause ill-health effects;

is completely and blatantly untrue.”

Dr. Grahame Blackwell

**ADDENDUM SEVEN**

Cell mast studies as listed above.

What is to be placed on the tower and its transmitting distance is to be made public ie WIMAX can transmit a radius of 48 kms ( WIMAX is prohibited in France ). **A restriction of the total collective frequency powers should be implemented using the Seletun Scientific Statement collective level of 0.2 V/m outdoors and to strive for the indoor collective value of 0.02 V/m as prescribed in Salzburg as a safety guideline in South Africa.**

**ADDENDUM EIGHT**

The Seletun Statement

A survey should also be done prior to installation to see if there are electrosensitive individuals who cannot handle any further increase of levels. ( There are some individuals who have had to move three times to escape levels that affect their health and well being and some have finally moved into almost total isolation in areas of South Africa).

The cost of screening and painting the house and providing sleeping nets for affected individuals should be borne by the service provider or government as done in Sweden.

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Regarding the possible health risks, taking guidance from the NDOH as per the annexure will not and is already not offering adequate protection for individuals as discussed in point 3.1.2.

**ICNIRP/WHO and IEEE/FCC public safety limits are inadequate and obsolete with respect to prolonged, low intensity exposures. New biologically based standards are required in South Africa. The exposure is 24/7 and not voluntary. (Professor Olle Johansson)**

In 2010 the Department of Noise and Radiation in the Israeli Ministry of Environmental Protection implemented a new program for monitoring non-ionizing radiation from cellular antennas. The program combines an innovative state-of-the-art technology for continuous measurement of cellular radiation with a set of processes and procedures to enable a truly comprehensive monitoring of cellular radiation on a nationwide scale. At the heart of the program is an innovative technology they licensed, which makes possible continuous monitoring of all radiation related parameters throughout the cellular network. A cellular network is designed in such a way that each and every one of the antennas in the network is connected to the radio switches, which are the core management center of the network. The antennas receive commands from the main network computer and report back on their performance and activities. This way the central system effectively manages the network and consequently has complete data of the activity in its network.

**ADDENDUM NINE**

Outline of levels being adopted in other countries – EMRRFSA graphic

Building Biology document.

**Israeli National Monitoring programme**

Whilst the Council notes that the “debate is ongoing “one only needs to look at the thousands of papers of independent research including historic papers over the last 40 years and what other governments are implementing to realise that the continued attempt by the industry to downplay the facts and the truth is creating a far bigger health travesty than the tobacco scandal.

The three top childhood cancers in South Africa are leukaemia, brain and then eye. The increase in paediatric cancers is alarming and a study map has been commissioned by CANSA.

**Radio Vatican recently lost a long court battle in Rome having been found guilty of causing a massive increase in cancers around its radio masts. Conclusions in the study of the death rate for leukemia at all ages: the risk factor up to 12 km distance from radio Vatican is 4.9 times higher than the expected value for distances beyond 12 km. Conclusions in the study of the incidence of leukemia and lymphoma in children ranging between 0 to 14 years of age: the risk factor up to 12 km distance from Radio Vatican is 4.1 to 4.7 times higher than the expected value for distances beyond 12 km and up to 6.9 times above expected when considering only children older than 1 year.**
Professor Yury Grigororiev, Chairman of the Russian National Committee on non-ionizing radiation stated in a Radiation Research Trust conference “The potential risk to children’s health is very high and a completely new problem. Use of mobile phones for those under 18 or pregnant women should be restricted. **Children have a unique vulnerability as they grow and develop: there are windows of susceptibility, periods when their organs and systems may be particularly sensitive to the effects of certain environmental threats. The existing standards cannot guarantee the safe, healthy development of the next generation** “


Increases in Autism, ADD, Diabetes, allergies, Alzheimers, MS and suicides have also been linked to EMF fields.

**ADDENDUM TEN**

**Childhood cancers in South Africa**

Radio Vatican found guilty of increased cancers in children

Japanese study on childhood cancers et al.

Dr Andrew Goldsworthy – Review on how electromagnetically induced cell leakage may cause Autism

Dr. Dietrich Klinghart, MD, PhD of the Institute of Neurobiology in Seattle - Increases in Autism linked to mother’s exposure to emfs during pregnancy

Dr Gerd Oberfeld – Environmental Medicine Evaluation of Electromagnetic Fields 2007

**What other governments, parliaments and councils have to say.**

Parliamentary Assembly, Council of Europe

8. In light of the above considerations, the Assembly recommends that the member states of the Council of Europe:

8.1. in general terms:

8.1.1. take all reasonable measures to reduce exposure to electromagnetic fields, especially to radio frequencies from mobile phones, and particularly the exposure to children and young people who seem to be most at risk from head tumours;

8.1.2. reconsider the scientific basis for the present electromagnetic fields exposure standards set by the International Commission on Non-Ionising Radiation Protection, which have serious limitations and apply “as low as reasonably achievable” (ALARA) principles, covering both thermal effects and the athermic or biological effects of electromagnetic
emissions or radiation;

8.1.3. put in place information and awareness-raising campaigns on the risks of potentially harmful long-term biological effects on the environment and on human health, especially targeting children, teenagers and young people of reproductive age;

8.1.4. pay particular attention to “electrosensitive” persons suffering from a syndrome of intolerance to electromagnetic fields and introduce special measures to protect them, including the creation of wave-free areas not covered by the wireless network;

8.1.5. in order to reduce costs, save energy, and protect the environment and human health, step up research on new types of antennas and mobile phone and DECT-type devices, and encourage research to develop telecommunication based on other technologies which are just as efficient but have less negative effects on the environment and health;

8.2. concerning the private use of mobile phones, DECT phones, WiFi, WLAN and WIMAX for computers and other wireless devices such as baby phones:

8.2.1. set preventive thresholds for levels of long-term exposure to microwaves in all indoor areas, in accordance with the precautionary principle, not exceeding 0.6 volts per metre, and in the medium term to reduce it to 0.2 volts per metre;

8.2.2. undertake appropriate risk-assessment procedures for all new types of device prior to licensing;

8.2.3. introduce clear labelling indicating the presence of microwaves or electromagnetic fields, the transmitting power or the specific absorption rate (SAR) of the device and any health risks connected with its use;

8.2.4. raise awareness on potential health risks of DECT-type wireless telephones, baby monitors and other domestic appliances which emit continuous pulse waves, if all electrical equipment is left permanently on standby, and recommend the use of wired, fixed telephones at home or, failing that, models which do not permanently emit pulse waves;

8.3. concerning the protection of children:

8.3.1. develop within different ministries (education, environment and health) targeted information campaigns aimed at teachers, parents and children to alert them to the specific risks of early, ill-considered and prolonged use of mobiles and other devices emitting microwaves;

8.3.2. for children in general, and particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by schoolchildren on school premises;

8.4. concerning the planning of electric power lines and relay antenna base stations:

8.4.1. introduce town planning measures to keep high-voltage power lines and other electric installations at a safe distance from dwellings;

8.4.2. apply strict safety standards for sound electric systems in new dwellings;
8.4.3. reduce threshold values for relay antennas in accordance with the ALARA principle and install systems for comprehensive and continuous monitoring of all antennas;

8.4.4. determine the sites of any new GSM, UMTS, WiFi or WIMAX antennas not solely according to the operators’ interests but in consultation with local and regional government officials, local residents and associations of concerned citizens;

8.5. concerning risk assessment and precautions:

8.5.1. make risk assessment more prevention oriented;

8.5.2. improve risk-assessment standards and quality by creating a standard risk scale, making the indication of the risk level mandatory, commissioning several risk hypotheses and considering compatibility with real life conditions;

8.5.3. pay heed to and protect “early warning” scientists;

8.5.4. formulate a human rights oriented definition of the precautionary and ALARA principles;

8.5.5. increase public funding of independent research, *inter alia* through grants from industry and taxation of products which are the subject of public research studies to evaluate health risks;

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The Russian Committee on non-ionising radiation’s Resolution 2011

Russia recommends that U18's and pregnant women do not use cell phones.

In April 2008, the RNCNIRP reviewed the short-term and long-term effects of mobile phone use for children. In particular, it reviewed possible decrease of intellectual abilities and cognition together with possible increases in susceptibility to epileptic fits, “acquired dementia” and degeneration of cerebral nervous structures [11]. The results of clinical studies have shown that chronic exposure to RF EMF may lead to borderline psychosomatic disorders [12, 13, 14, 15, 16]. In 2010, a number of papers published in Russian and foreign peer-reviewed journals showed a response to RF EMF exposure from the immune system [17, 18].

Unfortunately, statistical data published in 2009 and 2010 by ROSSTAT and UNICEF show that, since 2000 there has been a steady growth in the incidence of childhood diseases identified by RNCNIRP as “possible diseases” from mobile phone use [19, 20].
Of particular concern is the morbidity increase among young people aged 15 to 19 years. Compared to 2009, the number of CNS disorders among 15 to 17 year-old has grown by 85%, the number of individuals with epilepsy or epileptic syndrome has grown by 36%, the number of “mental retardation” cases has grown by 11%, and the number of blood disorders and immune status disorders has grown by 82%. In group of children aged less than 14 years there was a 64% growth in the number of blood disorders and immune status disorders, and 58% growth in nervous disorders.

The number of patients aged 15 to 17 years old having consultations and treatment due to CNS disorders has grown by 72%.

Professor Yury Grigororiev, Chairman of the Russian National Committee on non-ionizing radiation stated in a Radiation Research Trust conference “The potential risk to children’s health is very high and a completely new problem. Use of mobile phones for those under 18 or pregnant women should be restricted. **Children have a unique vulnerability as they grow and develop: there are windows of susceptibility, periods when their organs and systems may be particularly sensitive to the effects of certain environmental threats. The existing standards cannot guarantee the safe, healthy development of the next generation.**

**Recommendations for the New Government of Baden-Württemberg in Germany regarding a Sustainable Wireless Technologies Policy**

The wireless technologies policy of the state government adopts the following principles:

1. **Reducing Radiation Exposures**
   1.1. Wired alternatives will be implemented and promoted by the state government wherever possible. For example, Wi-Fi networks at public institutions and wireless Internet access in cities and rural areas shall be avoided. The state government calls on all municipalities to deploy sustainable fiber-optic technology instead of LTE (Long Term Evolution, 4G). Existing incentive programs will be expanded.
   1.2. The state government will initiate and promote pilot projects to test new wireless communication technologies that provide coverage but also reduce radiation exposure.

2. **Test First—Deploy Second**
   2.1. A moratorium is placed on the introduction of the TETRA technology in order to review its technical feasibility, costs to the state and municipalities, and health compatibility issues. To date, the results of pending studies are unknown.
   2.2. A moratorium is placed on the implementation of LTE because this new technology will contribute to a massive increase in radiation exposures and the health impact is not yet clear1. As an alternative, fiber-optic technologies are implemented (see 1.1.).
2.3. The data security of new wireless communication services such as traffic control and surveillance of cell phone applications will have to be examined prior to their implementation.

The Bioinitiative Report of 2007, where 2000 peer reviewed papers of scientists from all over the world covered the biological effects of microwave/non-ionising radiation, advised that WHO and ICNIRP Guidelines were not sufficient and not protecting one’s health.

The papers highlighted effects on gene and protein expression, DNA breaks, genotoxic effects, stress response, effects on neurology and behaviour, brain tumours and acoustic neuromas, childhood cancers such as leukaemia, reduced melatonin production, Alzheimers, skin disorders, strokes, weakened immune system and breast and other cancers. From these studies it was immediately recommended that the public exposure (accumulative) from these masts not exceed 0.6v/m with a recommended indoor level of 0.194v/m. These were considered as urgent amendments to current levels that ICNIRP has as guidelines. Some European countries have adopted these levels already and others have set new reduced levels to help protect their citizens and have adopted the “Precautionary Principle”.

http://www.bioinitiative.org/report

What should also be noted as clear action of the dangers by concerned countries the following has also been done:

Taiwan in 2007 removed 1500 masts from or near its schools.

France has rolled out optic fibre to much of its homes and schools to prevent the use of Wifi in schools.

France has banned WiFi in its National public libraries and many towns have removed it.

France has banned cell phones in primary schools and the sale of cell phones to under 14s.

Israel has banned antennae on residential blocks.

Israel has banned the rollout of 4G / LTE (This is imperative to note before this is done in South Africa)

Switzerland has rolled out optic fibre to its schools and the service is free but no WLAN or WiFi can be used.

Legal cases have also been won against the telecomm industry and a mass class action has just been filed in Israel.

Germany has advised its citizens not to use WLAN.

India bans the use of children and pregnant women in its advertisements.

Nigeria has taken note of the impacts and a tower has already been destroyed in Botswana.

**ADDENDUM ELEVEN**

**Parliamentary Assembly Council of Europe recommendations to member states.**

**RCNIRP** - Russian Commission on non-ionising radiation protection.
Recommendations for the New Government of Baden-Württemberg in Germany regarding a Sustainable Wireless Technologies Policy

Bioinitiative Report Summary
(For the full report go to http://www.bioinitiative.org/freeaccess/report/index.htm)

World Concerns Summary

6.1 SITE SELECTION AND CO-LOCATION

Points as detailed in section 5 to be noted.

6.1.2.1 A 50 metre buffer zone is not sufficient protection and suggested distances are noted in previous comments.

Co-location will need to be assessed and monitored from a health and safety point of view.

6.2 VISUAL IMPACT AND LANDSCAPING, PUBLIC AMENITY AND RESIDENTIAL AMENITY

This section whilst noting the visual effect and maintenance of the environment does not deal with the fact that there are many sites where either cell masts or antennae have been responsible for the deterioration and final death of the surrounding trees.

See examples below of tree deteriation in South Africa near cell masts.
Surrounding remaining trees dying next to tree mast.

Three trees have already been cut due to dying from microwave radiation.
Lampon transmitter in right hand picture causing effects to trees on side of road.

Tower near school and homes with trees showing damage
In addition it has been researched and stated in many scientific papers the impacts on wildlife, birds, bees, soils and even corrosion of building and metal structures.

Studies have also shown that power lines can result in the wires acting as antennae redirecting microwave radiation. Measurements at a Huntington Beach California School showed emissions from a cell tower re-radiated from nearby HV transmission lines and from the surrounding metal fence, producing abnormal hotspots. In another study done by The Italian Health and safety institute in 1997 – Radiofreqeuncy near high-voltage lines reported this as an epidemiological compounding factor. (Environmental health perspectives 105(6))

Another investigation in Canada by Magda Havas noted that the increase in a household’s electricity account was due to the installation of a nearby cell mast that produced surges on their power lines into the house.

It was estimated in 2009 that the carbon dioxide emissions produced globally by the telecoms industry released 110.7 million tonnes of Co2 into the atmosphere. That is equivalent to emissions from 29 million cars. (Bennett 2009).

The burden of these masts on the power consumption in South Africa needs to be assessed as currently their impact on the grid appears to be ignored.

The Department of the Environment should investigate these impacts urgently.

ADDENDUM 12

Andrew Michrowski – High Level microwave technology concerns / notes soil and corrosion in notes.

Warnke on birds and bees

Kumar – Indian study on bees.

Barrie Trower – Glastonbury Symposium lecture

Magda Havas – RF Cost of electricity.

GUIDELINES

6.4.3.1 It is agreed that all TI site must identify the property as to who is the responsible service provider. In addition it should note all the service providers renting space and the frequencies coming off that TI and its grid reference.

6.4.3.2 What law will protect the public if the council is also indemnified? Who are the public to appeal to in the event of ill health or damage? If the service provider indemnifies council then surely they must be prepared to sign a letter of guarantee for surrounding landowners.
The benefitting landowner should also sign that he accepts co-jointly with the service provider responsibility of possible health effects of the tenants / surrounding neighbours and be liable for future claims.

Who do people approach for investigation in health or environment matters as pertaining to this policy?

6.5 PUBLIC HEALTH AND SAFETY

6.5.2.2 The distance of 50 metres is not safe for a habitable structure, especially at the same level. Note previous notes on distances and antennae patterns.

7. OPERATIONAL CONTROLS

7.3 The ICNIRP levels are not protective levels for the South African Public as shown in many of the scientific research papers. The level was set by the industry to protect the industry and not the public. ICNIRP has been ignored and governments that are concerned have set levels according to the BioInitiative Report and the Seletun Statement. The ICNIRP level was set in order for the industry to roll out as much as possible without hindrance.

Uncertainties over ICNIRP’s membership and aims

1. Inadequate evaluation, protection and independence

ICNIRP claims that it is “an independent group of experts established to evaluate the state of knowledge about the effects of NIR on human health and well being, and, where appropriate, to provide scientifically based advice on non-ionizing radiation protection including the provision of guidelines on limiting exposure” (p.540). All these three claims – independence, evaluation and protection - have been much disputed in recent years:

- Inadequate evaluation - Although ICNIRP claims sufficient expertise to evaluate appropriately all the scientific evidence on the health dangers of non-ionising radiation, its traditional preponderance of physicists has suggested otherwise. The fact 14 leading international scientists studied the same evidence but deduced entirely different results in the form of the BioInitiative Report of 2007, suggests that either ICNIRP or the BioInitiative scientists are inadequately skilled in their evaluation. Moreover other organizations, such as the Russian NCNIRP have agreed with the BioInitiative scientists and not ICNIRP. The sheer weight of evidence, where even the WHO admits that 80% of studies in some areas show sub-heating adverse health effects, suggests that ICNIRP as currently constituted lacks the necessary medical and biological expertise to assess the relevant data.

- Inadequate protection - Although ICNIRP’s title includes the word ‘Protection’, it does not appear to operate as a committee protecting the health of the general public. Such a “protection” committee would act decisively on evidence suggesting even a 10-30% likelihood of a health risk from environmental pollution like electro-magnetic radiation. To demand 95% scientific certainty may suit a research committee, but not one committed to safeguarding public health where caution in the face of growing evidence of harm is essential.

- Inadequate independence - Although INCIRP claims its members “are not affiliated with commercial or industrial enterprises” (p.540), many observers regard ICNIRP as simply a front for the demands of the
telecoms and TV industries. There is, for instance, serious disquiet about the way ICNIRP members are selected. Dr Louis Slesin wrote in June 2007:

"It should be noted that ICNIRP is not a transparent organization. It has never disclosed the sources of its funding nor the procedures for the selection of its members. ICNIRP was established by Mike Repacholi, who has long had financial ties to both the telecom and electric utility industries."

In August 1995, before ICNIRP’s denial of sub-thermal dangers in 1998, Professor Ross Adey, chairman for the U.S. National Council for Radiation Protection and Measurement's (NCRP) committee evaluating the standards for power-line frequency electromagnetic fields, wrote:

"The laboratory evidence for athermal effects of both ELF and RF/Microwave fields now constitutes a major body of scientific literature in peer-reviewed journals. It is my personal view that to continue to ignore this work in the course of standard setting is irresponsible to the point of it being a public scandal."

Dr. John Goldsmith (author of ‘Epidemiological Evidence of Radiofrequency Radiation (Microwave) Effects on Military, Broadcasting and Occupational Studies’, 1995) wrote:

"There are strong political and economic reasons for wanting there to be no health effect of RF/MW (radiofrequency/microwave) exposure, just as there are strong public health reasons for more accurately portraying the risks. Those of us who intend to speak for public health must be ready for opposition that is nominally but not truly, scientific."


At first the main opposition to sub-thermal or biological safety limits came from the western governments and their military forces. Once the health risks were identified in the 1940s and 1950s from radar, it became increasingly expensive to provide sufficient buffer zones around airports and power lines. Only Russia, China and other countries following the implications of their medical research adopted biological limits. In the early 1990s, when the first links between mobile phones and brain tumours appeared, the industry, supported by some governments, lobbied for health issues to be banned from planning permission for transmitter masts. At the same time Motorola established a research team, which was accused of trying to find only positive evidence about phones, and ICNIRP was established. The industry had learnt from the problems faced by tobacco companies and wanted to maximize their profits for as long as possible before legal claims could be upheld.

The EU Parliament on September 4, 2008, by 522 votes to 16, stated that the 'ICNIRP guidelines were obsolete and out of date.'

NOTES ON COUNCIL’S ANNEXURES.

ANNEXURE 5 / Report from EMSS.

This report is from engineers that are employed by the Telecomms industry and are on retainers to some. The current research is glaringly avoided. EMSS is well aware that people have been affected in South Africa.
EMSS represents MTN at most meetings, public hearings and on TV. It appears that their objective may be perhaps, one of protecting the industry.

What is of major concern is that they state that “research to date indicates that what matters most is the intensity of exposure not the duration” but supply no scientific papers. That is completely wrong as indicated in thousands of papers in the Bioinitiative report and the latest review in Experimental Oncology by Yakymenko where long term exposure to microwave radiation provoking cancer growth is detailed. In addition the increases in cancers living near mobile base stations has been noted under long term studies around cell masts.

By 1971, the US Naval Medical Research Institute had also already referenced 2300 research articles listing in excess of 120 illnesses attributed to radio frequency and non-ionising microwave radiation. Under the Freedom of Information Act, extracts from published US Defence Intelligence Agency Documents confirmed the NMRI research and stated: 'If the more advanced nations of the West are strict in enforcement of stringent exposure standards, there could be unfavourable effects on industrial output and military functions.' Defence Intelligence Agency Documents: DST - 18105 - 076, ST-c5-01-169-72, DST-18105-074-76 (1972-1983).

Professor Olle Johanssen of the Department of Neuroscience and Dermatology Unit, Karolinska Institute, Sweden explains in one of his many research papers how EM fields attack the immune system, leading to disease and impairment. (Pathophysiology 16 (2009) 157 -177.)

- Both human and animal studies report large immunological changes with exposure to environmental levels of electromagnetic fields (EMFs). Some of these exposure levels are equivalent to those of e.g. wireless technologies in daily life.

- Measurable physiological changes (mast cells increases, for example) that are bedrock indicators of allergic response and inflammatory conditions are stimulated by EMF exposures.

- Chronic exposure to such factors increases allergic and inflammatory responses

With the effect on the immune system, one needs to also consider what impact that this is having on those that are HIV positive in South Africa in addition to developing children.

An industry study that was originally undertaken in German and then later uncovered and translated to English, is the ECOLOG study (funded by T-Mobile) Its conclusion after 220 peer-reviewed papers was that they found “strong indications for cancer-initiating and cancer-promoting effects of high frequency.” It also found indications for genotoxic effects like single and double stranded DNA breaks, birth deformities, disruptions of other cellular processes, stress reactions and disruptions to the endocrine and immune system.


Electromagnetic Pulse Radiation. From the early- to mid-1980s, hundreds of employees were continually exposed to high doses of electromagnetic pulse (EMP) radiation while working for the Boeing Corporation. In 1985, one employee was diagnosed with a rare leukemia. After filing a workers' compensation claim, the man
uncovered documents showing that Boeing had been using its workers to test the effects of EMP for the Defense Department. In June 1988, he filed a $7 million class action suit against Boeing and other companies. In August 1990, Boeing settled, paying over $500,000 to the man and his family (who established a foundation dedicated to funding EMP education and litigation), as well as funding medical exams and monitoring for workers. After the suit, Boeing minimized employee EMP radiation exposure, implemented an employee health-monitoring program and warned employees of possible dangers during medical examinations.


ADDENDUM THIRTEEN

Professor Olle Johansson - Disturbance of the immune system by electromagnetic fields—A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment”, Pathophysiol. 16, Iss.2-3, 157-177

Yakmenko – Long term exposure to microwave radiation promotes cancer growth.

T-Mobile German study – The Ecolog Report.

The annexure from the Department of Health indicates very clearly that the Department of Radiation Control has taken its cue from the service providers in South Africa and has made no effort to avail itself of the widely accepted peer reviewed scientific knowledge available nor the stance of the European Parliament or the many countries that have adopted the Bioinitiative levels, the Seletun levels or even lower such as Salzburg which was set by informed doctors and researchers. In fact it is apparent that the general guidelines of ICNIRP have not been read either.

Mr Du Toit / NDOH has also ignored the WHO/IARC release of 31st May 2011.

The Department of Health has not made any effort to investigate where people are being made ill by RF/EMF frequencies / modulations from cell or broadband/WIMAX/WiFi towers or transmitters, nor are they looking at technologies such as 4G that should be tested prior to any implementation of the programme.

Therefore it is not safe to take a directive from this department in the light of their document and concern is expressed at not just the lack of knowledge but the failure to note the health impacts on the citizens of South Africa or to take cognisance of the latest research.

Legal cases are underway against cell / base stations and government and officials should expect class actions in South Africa to include officials who have ignored current research and the precautionary principle.
ADDENDUM FOURTEEN

WHO/IARC release

Letter to Leon Du Toit

Letter to the Ministers of Health and Environment

Letter to Helen Zille

Letter to Amos Masondo

Health surveys done in SA (Other surveys are under way)

In closing, the efforts of the City Of Cape Town to update their policy is applauded and their endeavour in seeking out research in order to make a safer policy to address, what should be considered an urgent and serious concern in South Africa.

We trust that the information provided in this report will provide a basis for making the changes that will be necessary to protect the environment and future generations of South Africa.

FINAL WORD

In the words of Dr Robert O. Becker twice nominated for the Nobel Prize “I have no doubt in my mind that at the present time, the greatest polluting element in the earth’s environment is the proliferation of electromagnetic fields. I consider that to be far greater on a global scale, than warming, and the increase in chemical elements in the environment.”