My questions to ARPANSA in relation to the ARPANSA Radiation Protection Standard Maximum Exposure Levels to Radiofrequency Fields – 3kHz to 300 GHz Standard and Fact Sheets

1. “ARPANSA Radiation Protection Standard Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz Standard also sets limits for pulsed radiation that are intended to eliminate possible effects where heating is not evident (non-thermal effects).” Source ARPANSA’s webpage on Mobile Telephones and Health Effects -http://www.arpansa.gov.au/mobilephones/index.cfm

Question: How can the standard eliminate possible effects where heating is not evident when the standards only acknowledge non-thermal effects in passing and indicating that they “cannot be ruled out”, that the evidence for them is inconsistent and further confirmatory studies need to be carried out, particularly in relation to SAR estimations before they can be considered?

Answer: <ARPANSA representative to respond>

2. From Mobile Telephones and Health Effects (fact sheet 13) “Some research has indicated that non-thermal effects resulting from low-level RF exposure may also occur. However, the existence of these effects and their implications has not been sufficiently established to allow for them in the Standard.”

Question: This statement appears to be directly contradicting the previous statement made on your website in point 1 above. In one breath the ARPANSA is saying that non thermal effects are considered and then here (point 2) it implies they are not. Which is it?

Answer: <ARPANSA representative to respond>

3. In regards to non-thermal effects: “The review of scientific literature and consideration of possible low-level effects in the ICNIRP Guidelines (ICNIRP 1998) was noted. Around 80 studies relevant to the question of low-level interactions were identified in published peer reviewed journals after the ICNIRP cut-off date (1997) … those effects suggesting statistically significant biological interactions at SAR levels well below 1 W/kg need to be replicated satisfactorily, particularly if they are suggestive of harm, before they can form the basis of standard setting.”

Questions:
   a) Given that our standards are over 11 years old and are based on guidelines from ICNIRP which are almost 15 years old how many research papers have been looked at since the standard was released?
   b) Where are the reports on these studies that were reviewed and details of who the reviewers were along with their associations/affiliations?
   c) Only studies up to 1997 were considered in the ICNIRP Guidelines on which our standard was developed and the latest date that I could find for other studies noted in the RF standards was the year 2000. Our standards are hardly current when they do not take into account latest research findings are they?

Answer: <ARPANSA representative to respond>

4. From Dr Karl Maret’s Commentary on the California Council on Science and Technology Report “Health Impacts of Radio Frequency from Smart Meters” published January 2011. http://sagereports.com/smart-meter-rf/?p=368 “There is considerable difference between the biological impact of pulsed microwaves, as produced by Smart Meters, compared to continuous waves, such as those produced by microwave ovens. No distinction is made in the safety criteria between continuous and pulsed waves because of the narrow-minded focus on thermal damage alone.
Many scientific studies have pointed out that radio frequency radiation with different modulations and pulse characteristics produce different biological effects even though they may produce the same pattern of different specific absorption rate distribution and tissue heating (Levitt &Lai, 2010).
The potential health effects from chronic exposure to pulsed, low power density level electromagnetic fields might take several years to appear. These types of radiations produced by Smart Meters are of concern for their potential health impacts on the electrically hypersensitive part of the population. The ICNIRP, IEEE and ANSI standards that are currently in effect consider only thermal effects of microwave radiation where the energy absorption is fairly linear and thus the protective guidelines are logical. However these energy absorption guidelines would not be appropriate when frequency-specific amplitude windows are involved leading to adverse biological effects that can depend on modulation patterns, pulse repetition rates, duty cycles, and other frequency spectrum characteristics.”

Question: As our RF standards are based on ICNIRP Guidelines and only provide a level of protection against known thermal effects, I would like to know whether ARPANSA is planning to address concerns made by credible scientists such as Dr Karl Maret that our standards are not appropriate for providing assurances for pulsed microwave emissions (i.e. smart meters, mobile phones etc.) because they do not consider adverse biological effects that may occur below the thermal threshold?

Answer: <ARPANSA representative to respond>

5. There are many scientific studies that show consistent evidence that clearly demonstrate the existence of non-thermal biological effects. Peer review studies referenced by the BioInitiative report (2007) and (2012), Powerwatch.org.uk, US Navy Research Papers, peer reviewed research papers found in pathophysiology journals etc.

Question: How many reports showing unequivocal evidence of Biological effects such as DNA breaks, calcium efflux, increased production of histamines and mast cell count etc. before ARPANSA will recognise that non-thermal effects do exist and that there is a real potential health crisis looming because of manmade Radio Frequency emissions?

Answer: <ARPANSA representative to respond>

6. As I described in my letter which was sent along with this question sheet, ICNIRP only acknowledges the existence of thermal effects for RF EMR. ICNIRP’s opinion is that the non-thermal effects are not proven and that they are unlikely to exist. However, the IARC classification contradicts this opinion and indicates that non-thermal effects do exist. The decision to classify RF EMR as possible carcinogen was based predominantly on the results of the Interphone study and studies performed by the Swedish group working under Professor Lennart Hardell, which showed that long time use of a cell phone might increase the risk of development of brain cancer.

What this means is that there are possible health effects (cancer) developing in people who are using regular cell phones which are compliant with current ICNIRP radiation emission safety limits. Radiation emitted by such phones should not cause thermal effects or be associated with thermal based health risks. Given that mobile phones are supposed to be below the ICNIRP guidelines then any induced health effects must be non-thermal in nature which as a consequence has led to scientists observing an increased health risk – that is there is a risk of developing of brain cancer if you use a mobile phone for 10 years or more. This is of course is what a lot of independent scientists have been saying all along and yet ICNIRP, WHO and ARPANSA hold fast to the thermal paradigm and ignore mounting evidence that says otherwise.

Question:

How do our standards protect us when they do not consider non-thermal interactions, when research described above, which was used by the IARC to make a statement that RF EMR is a group 2B carcinogen and thereby validating the real possibility of non-thermal effects, has shown an elevated risk of getting a brain
tumour for mobile phone users who use the phone for around 30 minutes a day for 10 years (This is now the norm for today’s users)?

Answer: <ARPANSA representative to respond>

7. ARPANSA Mobile fact sheet 13 includes details of the Interphone Study initial report which showed “analysis of all the brain tumour results has suggested no overall risk for moderate mobile phone use by adults for up to 10 years”

Question: Why didn’t the fact sheet mention that brain tumour increase was found for heavy users at the time the study was conducted and that heavy users would be classified as normal users by today’s standards? It appears that ARPANSA has selectively taken (cherry picked) statements to validate its Standards and Fact Sheet position statements and ignored what is clearly evidence to the contrary. Moderate usage in the interphone study would be classified as users who hardly use the phone and are NOT representative of the average user today.

Answer: <ARPANSA representative to respond>

8. Measurement of SAR has some serious deficiencies. Firstly it is based on a human model that does not represent the majority of humans. It also has loopholes by not specifying the distance at which SAR must be measured (some providers are measuring at approximately 1 inch from the head.)

Question: Does ARPANSA disagree with the above statement and if so why? Please direct me to the page in our RF Standard which explains measurements of SAR must be performed at a set distance.

Answer: <ARPANSA representative to respond>

9. In regards to measurement of SAR there are no known recipes for fluids that are representative of body tissue at all frequencies. As such, different tissue simulant fluids are required for different frequencies (e.g., 900 MHz for GSM 900 and 1800 MHz for 1800 products). The brain simulant must be calibrated to ensure that the permittivity and conductivity are correct for the frequency being tested. Fluids are often made from a mixture of distilled water, sugar, and salt. Some frequencies, however, require other chemicals to obtain the required properties. Source: [http://www.ce-mag.com/archive/03/01/miller.html](http://www.ce-mag.com/archive/03/01/miller.html)

Questions:

a) How can ARPANSA give long term health assurances to the public when testing does not appear to be biologically based or representative of the majority of people? It is a simulation using fluids that represent the body’s tissues conductivity and thermal properties only. It does not contain real cells nor does it measure the impact on cell wall properties or cellular internal processes.

b) How does ARPANSA provide assurances that biological damage is not occurring when a person is exposed to microwaves at or below what the guidelines consider safe when there are no biologically based tests conducted to validate this?

c) Given that SAR and RMS Electromagnetic fields from a transmitting device are only measured for a period averaged over 6 minutes (i.e. RF frequencies between 100KHz to 6GHz for measurement of SAR and 100KHz to 10GHz for RMS E&M Fields) how do you verify safety to chronic long term exposures?

d) What consideration is made for children whose bodies are smaller and so SAR is likely to be higher?

e) Where is the data that adequately covers typical home scenarios where occupants are exposed to RF from multiple sources simultaneously such as mobile/smart phones, cordless digital phones, digital baby monitors, smart meters, mobile phone towers, AM and FM radio waves, wireless routers, computers and other blue tooth/wireless devices?

Answer: <ARPANSA representative to respond>
10. The Bioinitiative report release in (2007) reviewed more than 2000 papers that showed effects and the more recent updated version of the same report in 2012 reviewed a further 1800 papers showing effects that have biological health implications.

Questions:
   a) Does ARPANSA engage in studies itself to prove or disprove findings made by independently funded and conducted research or does your organisation simply sit on the fence and act as passive observers waiting for advisement from International bodies such as WHO, IEEE or ICNIRP?
   b) The Standards in several places provide examples where some health impacts were noted but in nearly all cases were indifferently brushed aside by saying more studies are needed. How many are needed before there is consensus? Who is doing these studies? ARPANSA?
   c) When can we expect the RF standards to be updated to take into account the latest (independent) scientific findings?
   d) Will a review of these studies be performed without undue influence from Telecommunication giants and their agents as well as wireless manufactures to avoid conflict of interest scenarios and will it be done in a transparent manner?
   e) Does ARPANSA take into consideration the sources of funding, potential conflicts of interest and potential industry interference when it reviews candidate studies?
   f) Where can I find the independent studies and reports that validate your claim that the standards provide protection against long term chronic exposures?

Answers: <ARPANSA representative to respond>

11. When there is a reasonable chance that wireless could be carcinogenic then deployment of such technology in an uncontrolled manner should be stopped until it is proven to be safe. IARC classified Wireless RF EMR as a Group 2B carcinogen “i.e." a causal association is considered credible, but when chance, bias or confounding cannot be ruled out with reasonable confidence.”

ARPANSA released the following statement “ARPANSA will consider the implications of the IARC decision and the underlying scientific evidence and, if necessary, review the current standard and other means of protecting the public.”

Questions:
   a) I have yet to observe any tangible findings or recommendations from ARPANSA in relation to what this announcement has on our 11 year old RF Standards and neither have I seen any new suggested protective measures for the public. What actions has ARPANSA taken since this announcement almost 2 years ago apart from releasing some commentary along with the above statement and a fact sheet 14 which irresponsibly claims “evidence suggests that the radiofrequency (RF) electromagnetic energy (EME) emissions of mobile phone handsets are not harmful to the user”?
   b) Despite the categorisation by the IARC that wireless is a Group 2B Carcinogen your organisation has created more recent fact sheets on mobile phones safety that do not explicitly mention this announcement and still suggest there is no concern. Why?

Answer: <ARPANSA representative to respond>
12. India’s RF guidelines were originally adopted based on the ICNIRP 1998 Guidelines like Australia. However recently (September 2012) India revised their standards to be 90% lower than what they had been previously.

Questions:

a) Would you care to explain why they would make such a deep cut if the ICNIRP guidelines are considered safe?

b) Would you also care to explain why countries like Russia and China have RF standards far more conservative than our own?

Answer: <ARPANSA representative to respond>

13. It would appear that wireless industry is self-regulated without any real oversight being provided by Government bodies such as ACMA. All they need to do is test their devices against the ARPANSA standard for 6 minute period and show that they are lower than the guidelines to be able to claim their devices are safe.

Question: Who actually conducts these tests to confirm the devices are within the limits?

Answer: <ARPANSA representative to respond>

14. ARPANSA provides a complaints register for people claiming to be sensitive or suffering from nearby microwave emissions. This register allows a person to raise a complaint indicating what they think the source of their complaint is and what symptoms they are experiencing.

Questions:

a) What does ARPANSA do with the complaints and are they shared with other departments including the health department?

b) Are there follow up actions taken to consult with those who suffer? I haven’t been contacted yet except by letter to acknowledge the receipt of my complaint and most recently in correspondence to a previous letter to Dr Larsson (CEO) suggesting I seek medical advice.

c) What is the point of the complaint register if there is no investigation of the matter? Are we just being used as measure for statistical analysis and that’s all?

d) How can you assure the public that the basic restrictions provide adequate protection when people such as myself are suffering very similar health ailments due to exposure levels 1000’s to 10000 or more times below the ICNIRP guidelines, that scientists have demonstrated through epidemiological and in vitro/in vivo studies that biological effects with potential health implications do occur below reference levels and in some studies genotoxic events were found?

Answer: <ARPANSA representative to respond>

15. ARPANSA’s mission statement (on page 4 of the pdf for the RF standard, just before the Foreword), states that the ‘mission of ARPANSA is to provide the scientific expertise and infrastructure necessary... to protect the health and safety of people, and to protect the environment, from the harmful effects of radiation’

Questions:

a) Which publication in the Radiation Publication Series provides RF radiation standards for the environment, such as for plants, trees, bees, birds and amphibians?

b) What is ARPANSA doing by way of researching or monitoring of research into the effects of radiation on the environment such as from smart meter rollouts in Victoria?

Answer: <ARPANSA representative to respond>
16. There has been a shift in perception on the health and safety of smart meter globally. A number of countries have announced opt out programs such as in Canada (in Quebec), in the USA including California (PG&E, San Diego Gas and Electric, and Southern California Edison consumers have all now won this right), Maine, Vermont, Louisiana, Michigan, and Connecticut. Smart meters were made voluntary in the Netherlands in 2009 and in the UK earlier this year. A number of countries and/or states within foreign countries (i.e. UK and US) created moratoriums on smart meter rollout programs including the provision of opt-out clauses for previously mandated rollouts because of potential health concerns

Questions:

a) Has ARPANSA reviewed these potential health issues?
b) Why has ARPANSA not made any statements relating to these overseas actions on their website?
c) Your smart meter fact sheet directs people Victorian government website which claims that smart meter emissions are below stated RF guidelines and that “there is no substantive evidence to suggest that exposure to radiofrequency radiation such as from Smart Meters can increase the risk of chronic health effects” so how do you explain my symptoms and those that I provided with the included letter which would most definitely be classified as “chronic health effects” that only have developed since the rollout of smart meters in our street?

Answer: <ARPANSA representative to respond>

17. From your Smart Meter Fact Sheet – “Victoria’s Chief Health Officer has endorsed the advice of the Committee that, ‘there is no substantive evidence to suggest that exposure to radiofrequency radiation such as from Smart Meters can increase the risk of chronic health effects, such as cancer’.

Victoria’s Chief Health Officer has also endorsed the advice of the Australian Radiation Protection and Nuclear Safety Agency that “the overall exposure from Smart Meters is very low and well below exposure limits, even when a number of devices are communicating simultaneously”.

Questions:

a) Since when has the Victorian Chief Health Officer become a non-ionising radiation expert to make such an endorsement?
b) If you were going to respond that she has been advised by the Radiation Advisory Committee then you would be aware that there is only one member on that committee who has a background in non-ionising radiation, i.e. Dr Ken Joiner who also happened to previously work for Motorola. The fact that the industry has potentially infiltrated positions of trust in advisory committees does this not concern you about the possibility of conflicts of interest?

Answer: <ARPANSA representative to respond>

18. There appears to be a serious lack of information on the ARPANSA website on smart meters. Instead your very thin fact sheet directs people to look at a Victorian Government DPI website to get further facts.

Question: Since when has the Victorian Government become a recognised authority on smart meter health and safety, particularly in regards to wireless emissions, and why isn’t ARPANSA taking a lead role? When the DPI is challenged about safety of wireless emissions they refer people to ARPANSA. I feel I am going in circles here!

Answer: <ARPANSA representative to respond>
19. From our RF standards “A working group was established under the auspices of ARPANSA’s Radiation Health Committee (RHC) to draft a set of maximum exposure levels for radiofrequency fields in the frequency range 3 kHz to 300 GHz. In choosing the members of the working group, ARPANSA consulted widely with a range of relevant groups to achieve a spread of relevant interests and expertise. The working group included expertise on electromagnetic radiation bio-effects, dosimetry and measurement techniques, medical expertise on epidemiology and occupational health and safety aspects, and knowledge of technical standards.”

Question: Did this working group consist of people who represented the industry and their interests directly or indirectly? Can you provide me with a list of the working group members and their associations please?

Answer: <ARPANSA representative to respond>

EMC Technologies Report
Chris Zombola (a co-author of the EMC Technologies report with Prof Andrew Wood, both also managing directors of the same company): can be traced back to Telstra, involved in many companies including Comtest Laboratories (again from Telstra) and EMC Engineering where he worked with the current Jemena’s media and communications director, and where Andrew Wood worked too.

You mentioned in your letter to me that ARPANSA works independent of the industry but conflicts of interests don’t have be through direct channels with the industry. Look above and we see Industry involvement. Conflicts of interests can also arise from personal businesses conflicting with responsibilities that are required by ARPANSA. Receiving awards telecommunications companies could be seen to be an inducement for favours. Reports being created by people who have previously worked for the industry. The government has strict rules on its ministers in regards to conflicts of interests and ethics. Both are dealt with severely especially if the opposition party gets hold of it. One hopes the same level of scrutiny is applied when advisory councils are set up and staffed.

Of course the details above do not necessarily mean that improper and unethical behaviour has occurred but it does lead to questions and the need for further investigation.