



Australian Government

Australian Radiation Protection and Nuclear Safety Agency

Government Expectations of ICNIRP Science vs. Protection

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(ARPANSA)





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ARPANSA - who we are

- The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is the Australian Government's primary authority on radiation protection and nuclear safety.
- ARPANSA regulates Commonwealth entities using radiation with the objective of protecting people and the environment from the harmful effect of radiation.
- ARPANSA undertakes research, provides services, and promotes national uniformity and the implementation of international best practice across all jurisdictions.





National uniformity and international best practice

Australia is a federation

- ARPANSA works with state and territory regulators to promote national uniformity of radiation protection mainly through the Radiation Health Committee (RHC)
- The Codes and Guides reflect international best practice (IBP)
- ARPANSA seeks guidance on IBP from relevant international organisations
- For IBP in non-ionising radiation protection ARPANSA looks to ICNIRP, WHO and others





ARPANSA NIR activities

- all optical radiation - UV, visible light, lasers, IPL's
- static, ELF and RF fields

Commercial Services

UPF Testing
UV Swing Tags
RF Calibrations

Measurement

Solar UV Monitoring
EMR field Measurement

Assessment

Reviewing Research
Health Impacts
Modelling

Communicating

Stakeholder Engagement
Online Material
Government Advice





The Australian EME Program

- The EME Program has run since 1996 with Government support to provide information to the public and support research into health issues associated with mobile and other communications systems
 - An Australian research program managed by the National Health and Medical Research Council (NHMRC)
 - Australian participation in the World Health Organization's (WHO) International Electromagnetic Fields (EMF) Project
 - a public information program managed by ARPANSA to provide information to the public and other stakeholders

<http://www.arpansa.gov.au/pubs/eme/fact2.pdf>





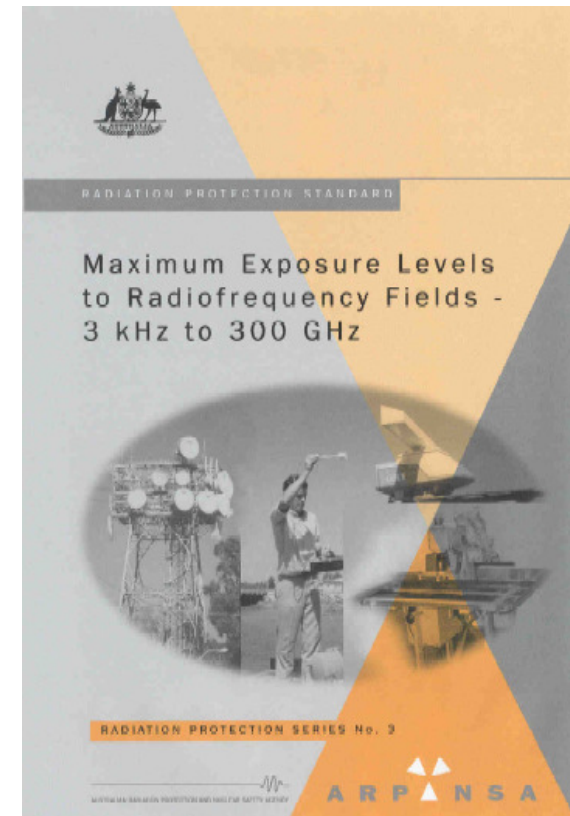
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The ARPANSA RF Standard

- ARPANSA published the Standard *Maximum Exposure Levels to Radiofrequency Fields - 3 kHz to 300 GHz* in May 2002
- The exposure limits are based on the 1998 ICNIRP guidelines; and
- are intended to protect people of all ages and health status against all known adverse health effects.
- The Standard is implemented by the Australian Communications and Media Authority

<http://www.arpansa.gov.au/pubs/rps/rps3.pdf>



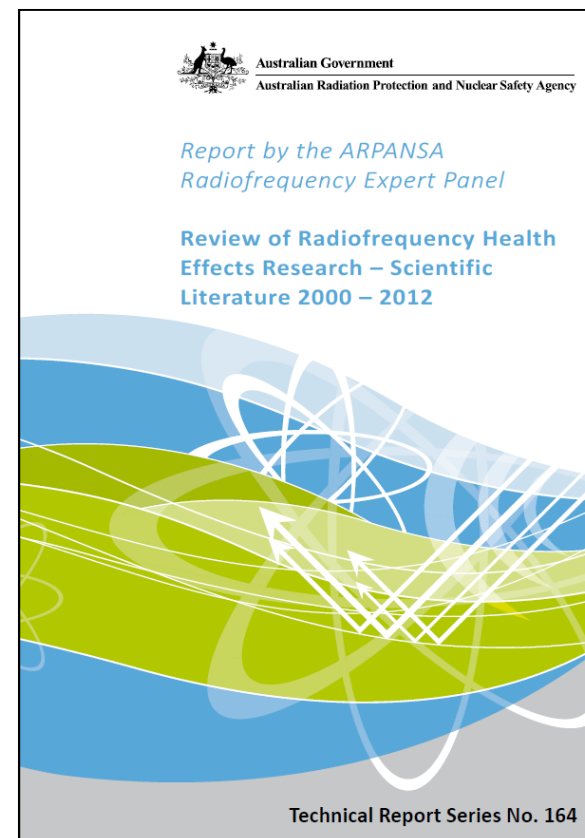


The ARPANSA RF Expert Review

The Expert Panel

- Was established to assess the current science
- Identified areas where the Standard could be updated by
 - taking account of new knowledge; and
 - harmonisation with international standards.
- ARPANSA has initiated a process for updating the RF Standard which will include recommendations by the Expert Panel as well as guidance from ICNIRP and WHO.

“.....the underlying basis of the ARPANSA RF Exposure Standard remains sound and that the exposure limits in the Standard continue to provide a high degree of protection against the known health effects of RF fields”





A Precautionary Strategy for Australia

- The ARPANSA RF Standard includes a requirement to minimise unnecessary or incidental public exposure to address the scientific uncertainty about possible health effects
- ARPANSA and the Radiation Health and Safety Advisory Council intends to develop a precautionary statement covering all types of radiation
- ARPANSA will engage government and other stakeholders to develop guidance on precaution
- A precautionary strategy for Australia includes education and engagement with the community and other stakeholders



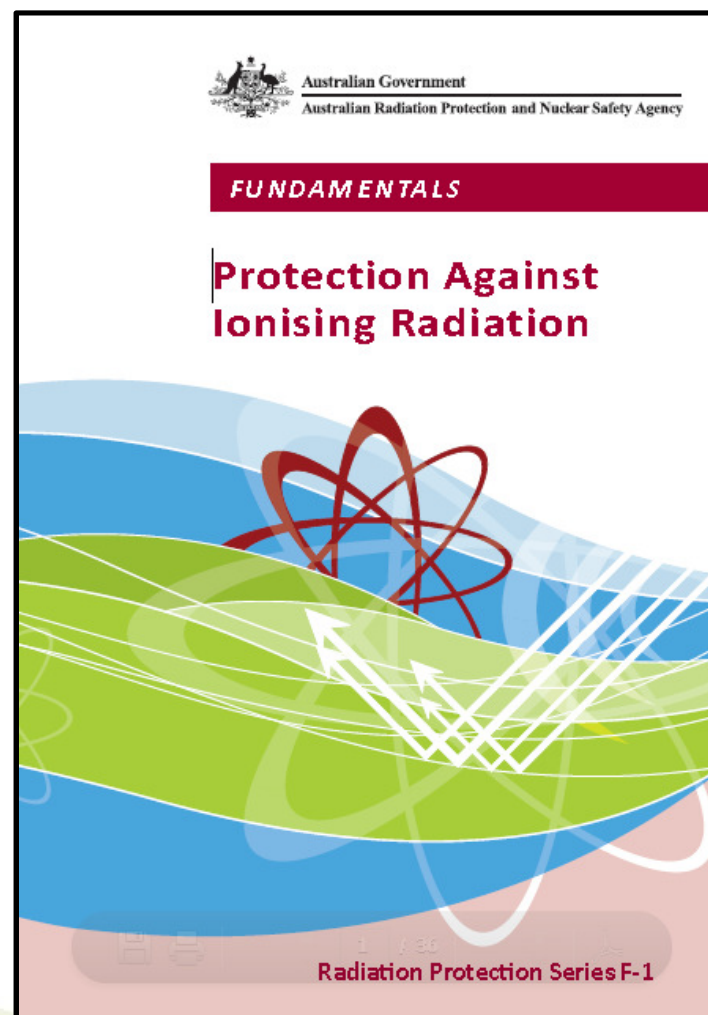


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A Unified Approach?

- Mapping how 'Fundamentals' can be developed that cover both ionising and non-ionising radiation
- Avoid fragmentation
- Facilitate dialogue around radiation risks
- Avoid bureaucratic obstacles to innovation
- Is there a unified approach?





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Mandatory EME Reports

- In Australia new or upgraded mobile phone base stations require documentation that shows the calculated levels of electromagnetic energy (EME) around the facility.
- This information is presented as a report in an approved ARPANSA Environmental EME Report format.
- Environmental EME Reports for different mobile phone base stations across Australia can be found in the Radio Frequency National Site Archive

<http://www.rfnsa.com.au/nsa/index.cgi>



Example of calculated EME levels

Distance from the antennas at 123 High St in 360° circular bands	Maximum Cumulative EME Level at 1.5m above ground – All carriers at this site					
	Existing Equipment			Existing and Proposed Equipment		
	Electric Field V/m	Power Density mW/m ²	% ARPANSA exposure limits	Electric Field V/m	Power Density mW/m ²	% ARPANSA exposure limits
0m to 50m	1.74	8.055	0.18%	2.56	17.33	0.3%
50m to 100m	2.91	22.53	0.5%	5.57	82.37	1.24%
100m to 200m	2.78	20.49	0.46%	5.80	89.15	1.33%
200m to 300m	1.49	5.873	0.13%	3.98	42.06	0.63%
300m to 400m	1.00	2.641	0.059%	2.67	18.96	0.28%
400m to 500m	0.75	1.478	0.033%	2.02	10.79	0.16%
Maximum EME level	2.92	22.53	0.5%	5.79	89.15	1.33%
	81.72 m, from the antennas at 123 High St			122.35 m, from the antennas at 123 High St		

Note - Measurement surveys have shown that measured EME levels are usually 2 to 10 times lower than the calculated predictions given in the Environmental EME Reports



Communication and stakeholder engagement

- The provision of information on the ARPANSA website on RF exposure and health, including typical exposures in the home and the environment. This information is available

<http://www.arpansa.gov.au/RadiationProtection/Factsheets/index.cfm>

- ARPANSA operates the EME Reference Group (EMERG) to enable input from the community and other stakeholders on issues relating to RF and health

<http://www.arpansa.gov.au/AboutUs/Committees/emerg.cfm>

- ARPANSA continues to gather information on actual exposure levels e.g. conduct a study in 2015 on children's RF exposure from Wi-Fi in schools





Wi-Fi in schools study

- The use of Wi-Fi has increased rapidly and there is some public concern about potential health effects associated Wi-Fi particularly in schools
- ARPANSA is planning to conduct a study in 2015 investigating children's RF exposure from Wi-Fi in schools
- Reports from other countries have shown the RF exposures to be very low – ARPANSA study will aim to verify this



PROJECT SCOPE: Quantify the exposure from Wi-Fi equipment, as used by children in schools, and compare it with exposure guidelines as well as with exposures from other wireless telecommunication sources



Planning for the Wi-Fi measurement study

- ARPANSA is planning to measure a targeted sample of schools in different Australian states
- ARPANSA is currently planning the methodology for the study including the measurement protocol
- There will be wide engagement in the planning and implementation process, e.g. engagement with the schools, relevant education departments and the community, e.g. through EMERG

Communication Strategy

Explain ARPANSA's role

Adopt position on health effects before commencing study

Avoid long gaps in communication

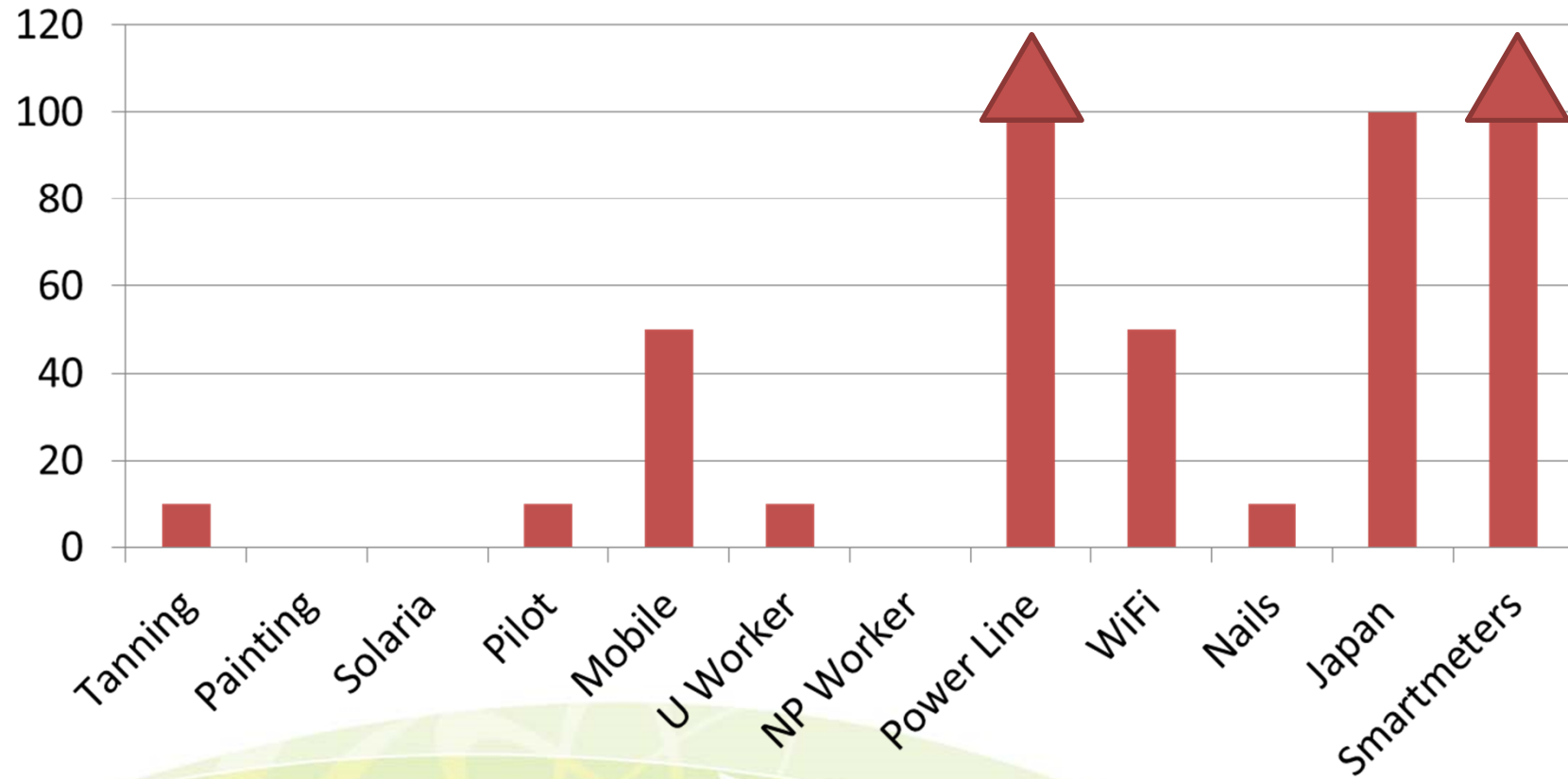
Ensure scientific credibility

Bring clarity to the situation by context and using the exposure information



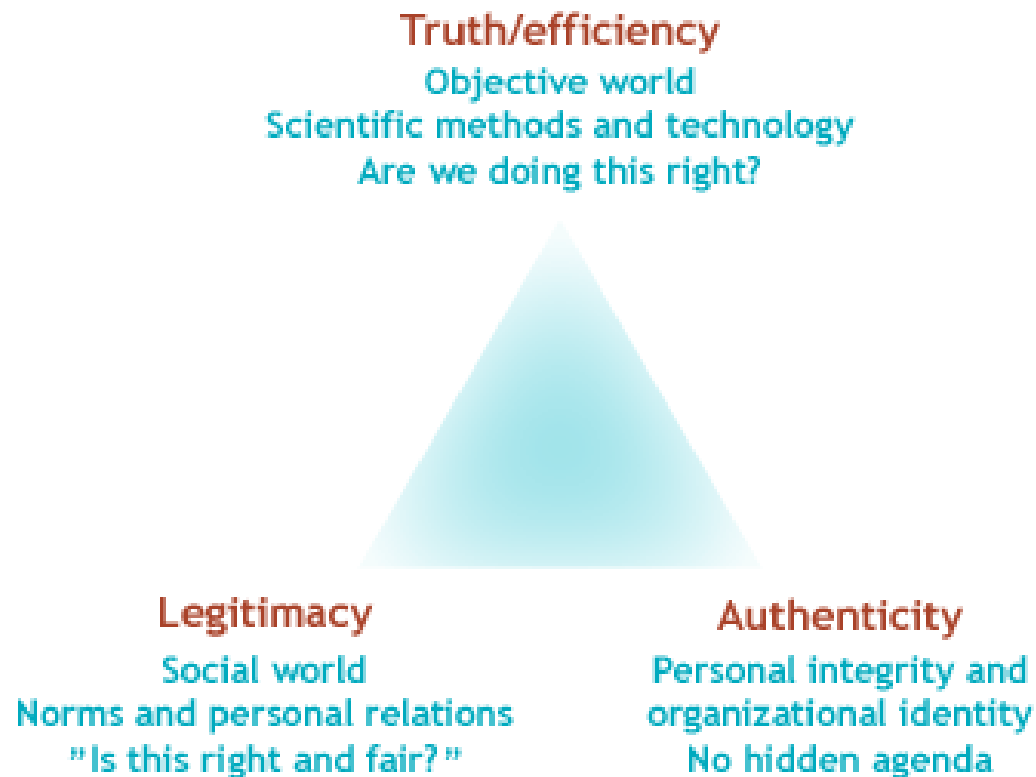
ARPANSA Public Enquires for 2013-2014

(about 1500 a year)





The RISC¹ Model



¹The RISC¹ Model Project started in 1997 and was funded jointly by the Swedish Nuclear Power Inspectorate and the Swedish Radiation Protection Authority. The driver was the siting of a deep disposal facility for spent nuclear fuel in Sweden.

http://www.karita.se/our_approach/riscom_model.php



The RISCUM Model

Truth/efficiency

Technical/scientific issues can be clarified with scientific methods. They relate to questions like "Is this true?"; "Are we doing things right?"; "What, and how big, are the uncertainties?"

Legitimacy

Normative issues reflect what is considered fair and acceptable in society, what is legitimate. In an expert dominated area, such as many technology driven fields, normative issues are often not openly explored. Instead they are discussed "under the surface", often hidden in expert investigation.

Authenticity

Authenticity builds trust; it has to do with consistency between the actions of a person (or an organization) and who the person (or organization) is, or the role in the decision-making context. If a stakeholder considers an organization to be authentic, he is more likely to trust its views and decisions, thus reducing his demands for technical details.



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THANK YOU

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