

Australian EMC, EMR, SAR, Telecom, Wireless, and Safety Requirements

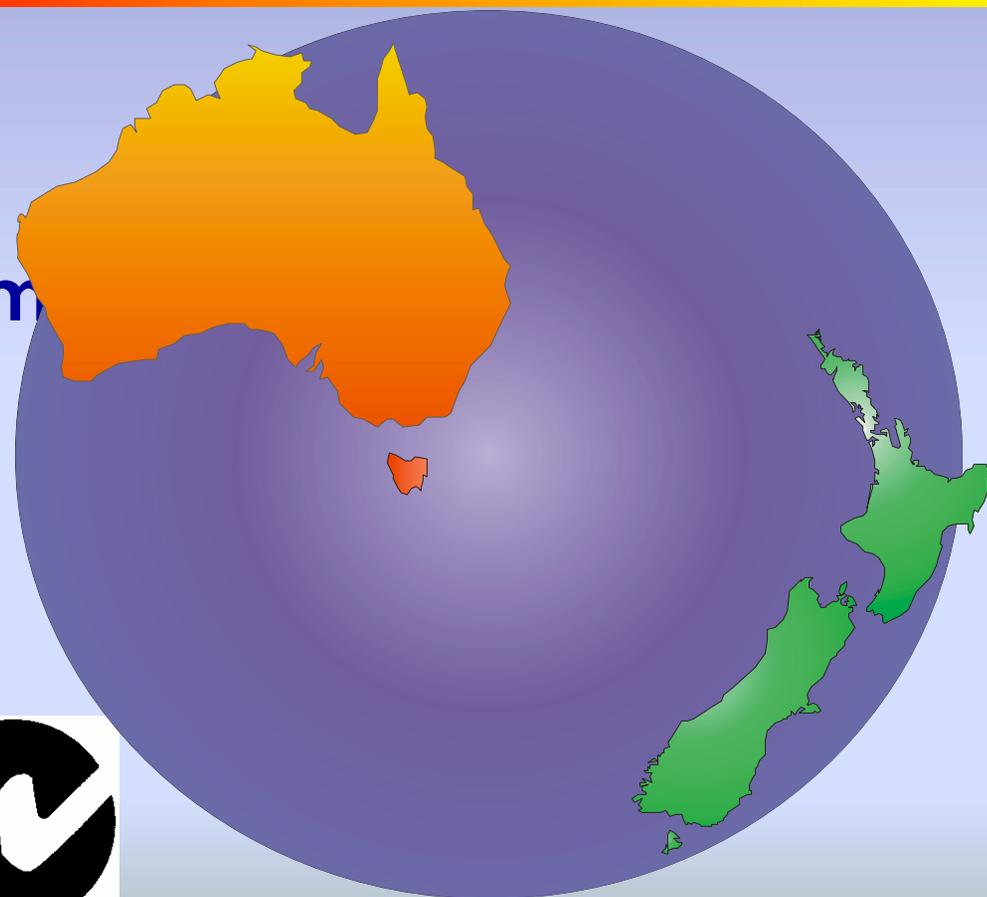
A stylized map of Australia and New Zealand is overlaid on a purple globe. Australia is colored in shades of orange and yellow, while New Zealand is colored in shades of green. The globe is centered on the Pacific Ocean.

Chris Zombolas
Technical Director
EMC Technologies
Australia Pty Ltd

Requirements for Australia

Topics to be covered

- EMC
- EMR-SAR
- Wireless Telecommunications
- Radiocommunications
- Telecommunications
- Electrical Safety



Australian Communications And Media Authority (ACMA)

EMC Scheme

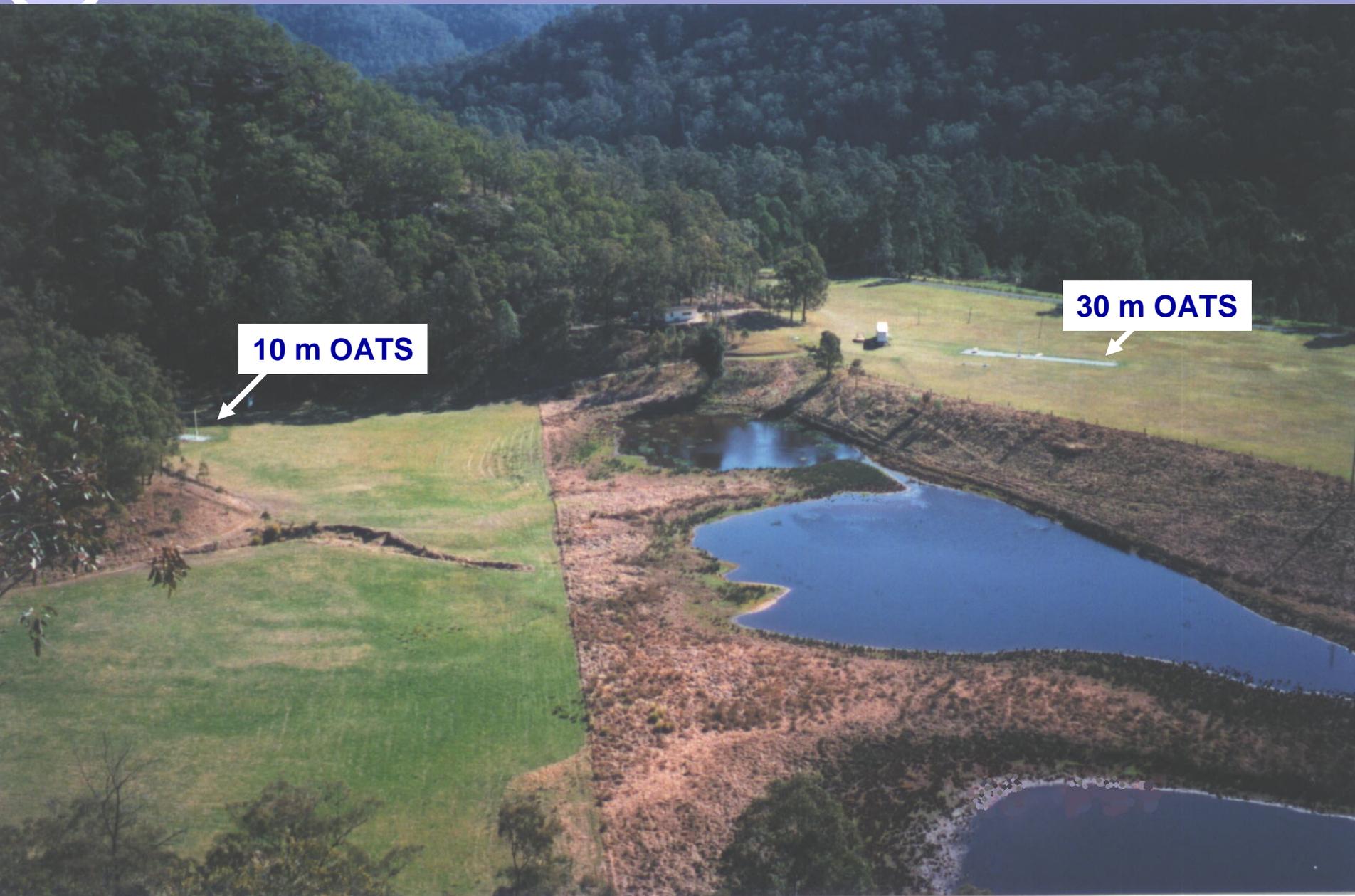
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Lerderderg Gorge (near Melbourne, Australia) – OATS





10 m OATS

30 m OATS



Kookaburra can effect measurements !



Koalas do not !!



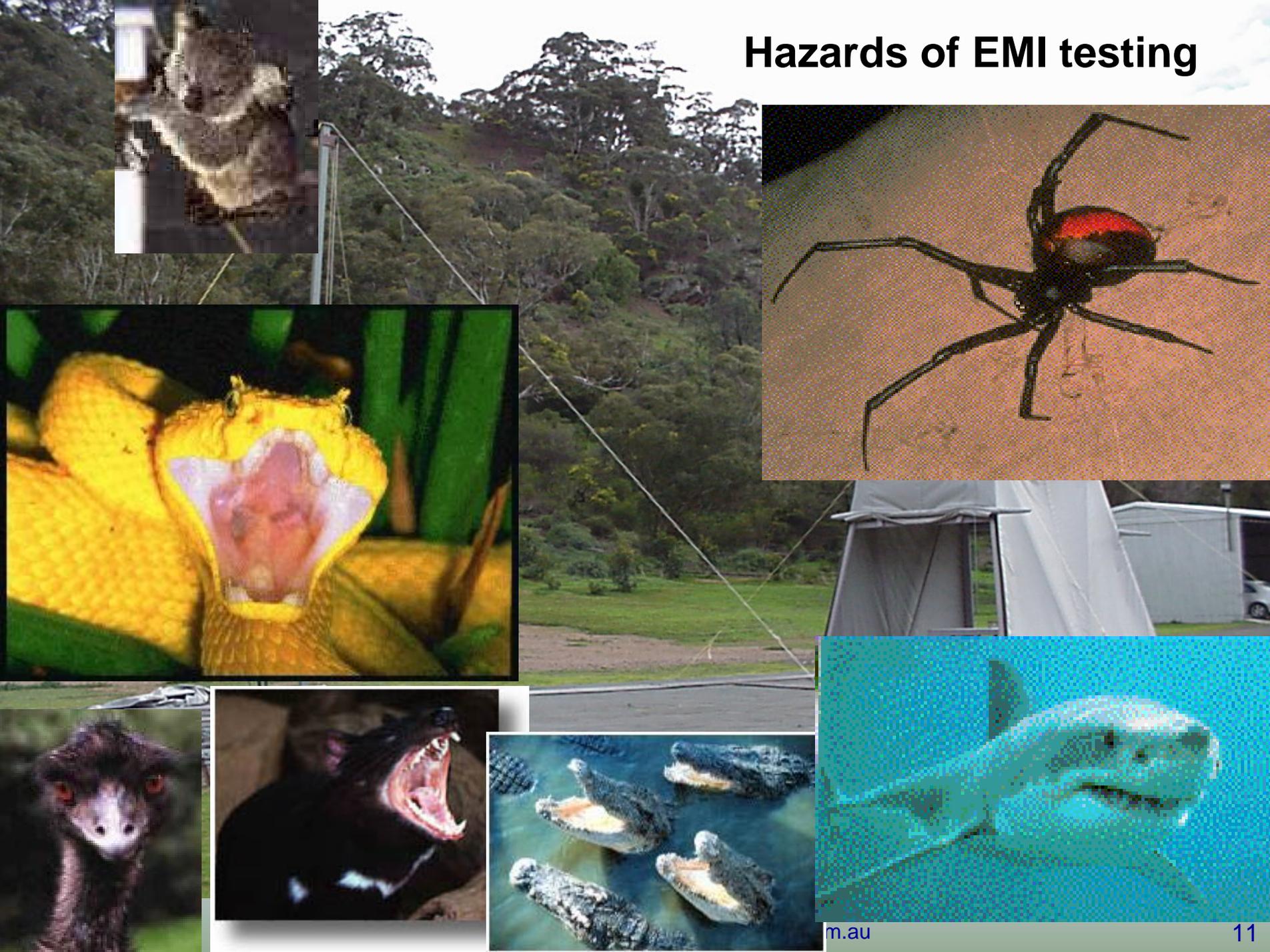


Regular visitors To OATS

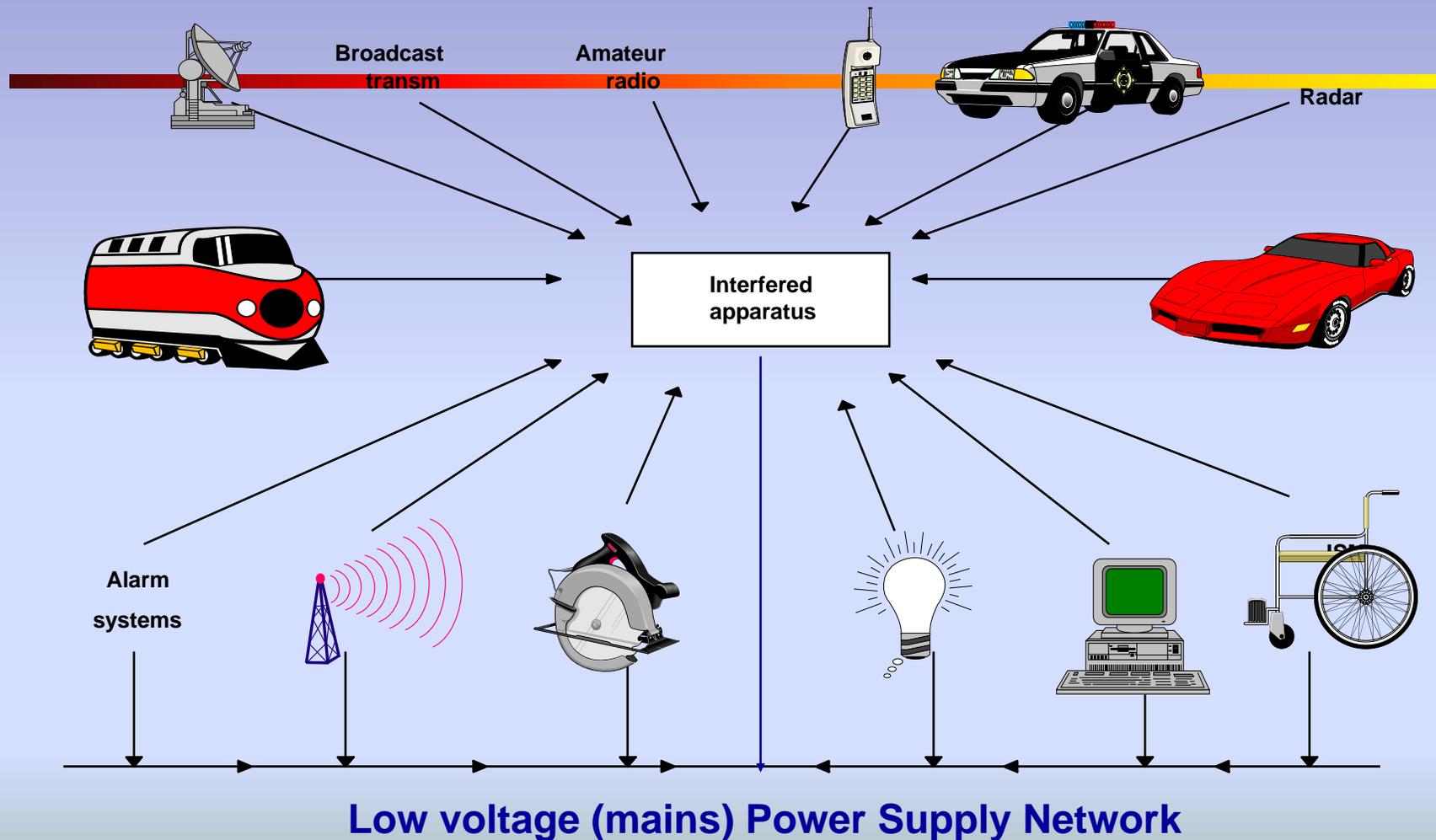
Feral goats can be a problem!

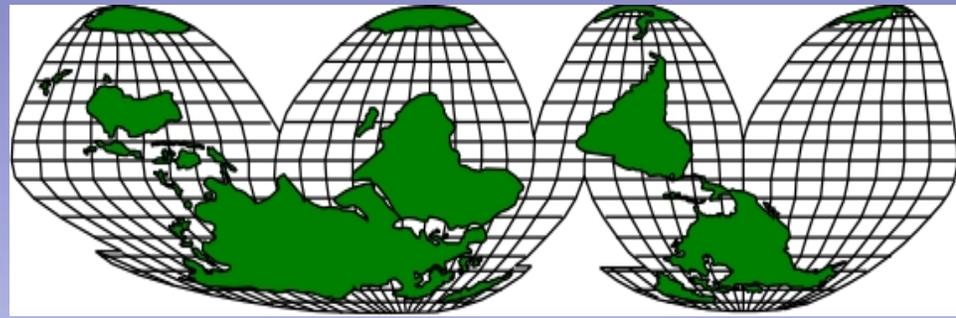


Hazards of EMI testing



EMC Environment (increasingly hostile)

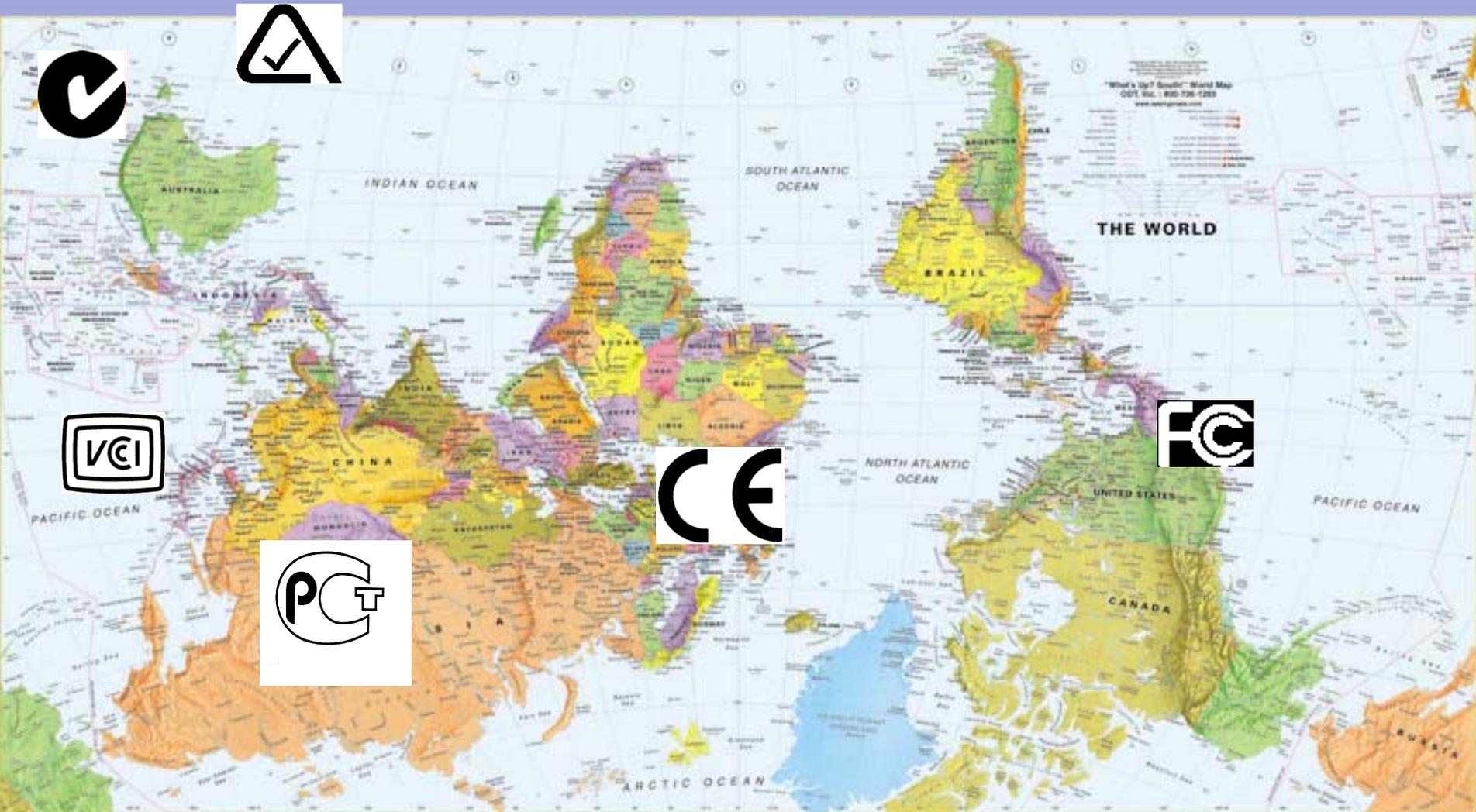




EMC Regulations

- Most nations have defined the compliance requirements for electrical products.
- Most have specified the particular standards to apply.
- As the world harmonizes standards, it is becoming easier to prove compliance.
- Australia/NZ generally follow the IEC/CISPR/European standards.

International EMC Requirements



Australian Communications and Media Authority (ACMA)

- formerly the
Australian Communications Authority (ACA)

Mandatory EMC Standards

9 Mandatory AS/NZS EMC Standards

Australian/New Zealand Standard	Product Coverage
AS/NZS CISPR14-1	Electrical motor-operated & thermal appliances, electric tools & similar apparatus
AS/NZS CISPR 15	Electrical lighting and similar equipment
AS/NZS CISPR 13	TV receivers and audio equipment
AS/NZS CISPR 22	Information technology
AS/NZS CISPR 11	Industrial, Scientific & Medical equipment
AS/NZS CISPR 12	Internal Combustion engines
AS/NZS 3652	Arc welding equipment
AS/NZS 61000-6-3	Generic standard, commercial, light industry and residential. Covers other products not subject to the above standards.
AS/NZS 61000-6-4	Generic standard, heavy industry.

C-Tick History

- Introduced 1 January 1997;
- Introduced for trade reasons;
 - EU & other trading countries
- Based on emission standards
- Other factors
 - protect Australian manufactured products;
 - limit electromagnetic pollution.



Australian EMC Framework

- Product falls within scope of EMC scheme
- Suppliers declaration + compliance records + labelling;
- C-tick compliance label;
- ACMA post-market audits
- Responsibility rests with suppliers of equipment
- Offences lead to penalties and sanctions



ACA Mandatory EMC Arrangements

- Suppliers must establish & maintain specified compliance records that show products meet standards & affix a compliance label to products.
- ACMA inspects compliance records
- It is an offence to supply products
 - Not compliant with relevant EMC standards
 - Without compliance records and labelling
- ACA's website:
<http://www.aca.gov.au/standards/emc/emc.htm>

Australia versus USA



-
- FCC Part 15 and C-tick are very similar but not equivalent
 - ACA does not recognise FCC Parts 15 and 18
 - FCC Part 15: Information Technology products and most other products
 - FCC Part 18: Industrial, Scientific & medical equipment
 - Supplier must have appropriate CISPR report

Australia Vs European Union



Australia

- (1) Radiated/Conducted EMI Phenomena
- (2) Registered C-Tick users
- (3) Suppliers declaration + test + report

Europe (EN)

- Several EMC + immunity
- No CE label registration
- Supplier's declaration only *

**** EU will become similar to Australia approach for new EMC Directive***

Is CE acceptable?



CE

does not equal

C-Tick

Trans-Tasman MRA

Australia-New Zealand

- Products meeting EMC scheme in Australia can be supplied to NZ without additional requirement - and vica-versa;
- C-tick compliance label distinguishes either Aust or NZ supplier:
 - For *NZ*: C-tick + **Z**999 ('Z' prefix)
 - For *Aust*: C-tick + **N**999 ('N' prefix)



EMC Framework

- The C-tick harmonization between Australia and New Zealand commenced 2001.
- Trans-Tasman EMC Scheme applies to most products covered by CISPR/IEC/EN/AS/NZS Emissions standards
- Gradually being extended to cover radio and other products



EMC Requirements

-
- The requirements apply to suppliers of electrical & electronic equipment in Australia/NZ

Definition of Supplier

- Aust/NZ manufacturer who makes products for supply to Australia/NZ market
- An importer of products intended for supply in Australia/NZ
- Authorised agent, resident in Aust/NZ, acting on behalf of a supplier of products to Aust/NZ



EMC Framework

SCOPE:

- Products under scope of one of the ACMA mandated standards are subject to C-tick requirements
- Some exemptions



EMC Scheme

Mandated EMC Standards

Australia

International

Electrical tools & appliances -	AS/NZS CISPR 14-1	CISPR 14-1
Sound & TV equipment -	AS/NZS CISPR 13	CISPR 13
Industrial, Scientific & Medical -	AS/NZS CISPR11	CISPR 11
Vehicles, spark ignition motors -	AS/NZS CISPR12	CISPR 12
IT & Business Equipment -	AS/NZS CISPR 22	CISPR 22
Arc Welding Equipment -	AS/NZS 3652	EN 50199
Lighting & similar equipment -	AS/NZS CISPR15	CISPR 15
Generic Emissions		
- Light industry	AS/NZS 61000-6-4	IEC 61000-6-4
- Heavy industry	AS/NZS 61000-6-3	IEC61000-6-3



EMC Scheme

- **Immunity Standards :**

- Currently not mandatory for Australia for all other equipment.
- ACA may reconsider in the future.
- Mandatory immunity testing (NATA) of Medical Devices subject to TGA listing



EMC Scheme

- **Excluded products:**
 - Devices not using general electric supply
 - exported apparatus
 - prototypes (Not for sale) & trade fair product samples
 - spare parts
 - second hand items (not modified)
 - < 6 nW power consumption
 - CASA avionics, military devices, certain high risk TGA listed devices, police, security,
 - Educational EMC equipment
 - Fixed Installation

C-tick Applicability Decision Chart

Establish the primary function of the device

Is the device covered by the framework?

No

Compliance Not Required

Yes

Is there a product specific standard?

Yes

AS/NZS (Int) 3652
Arc welding equipment

Yes

No

Is there a product family standard?

No

Does the product connect directly or indirectly to the low voltage supply?

Yes

Yes

Check for power source

Generic standard applies

Next Slide

Compliance Required

Previous Slide

AS/NZS CISPR12
NB: power supply not applicable

Check for power source

AS/NZS CISPR14-1
Is the device directly or indirectly connected to the low voltage mains

Yes

AS/NZS CISPR 11 Is the device directly or indirectly connected to the low voltage mains or battery supply
NB: compliance for all ISM devices is required

Yes

AS/NZS CISPR 15
Is the device directly or indirectly connected to the low voltage mains or battery powered?
NB: incandescent lamps are deemed to comply

Yes

AS/NZS CISPR 13 Is the device directly or indirectly connected to the low voltage mains or battery supply

Yes

AS/NZS CISPR 22 Is the device connected to supply not exceeding 600V or battery supply

Yes

No

No

No

No

Yes

Compliance Not Required

Compliance Required

Definitions

- **Fixed Installation**

“A combination of types of devices, components and hardware that are assembled and installed at a place of use in such a way that the combination cannot be moved without a part of the combination being at least partially disassembled.”

Definitions

- **End User**

“a consumer :

(a) to whom a device is supplied; and

(b) who is a residential, light industrial or commercial consumer;

But does not include a manufacturer who is supplied with a device for the purpose of incorporation it as part of a separate device”.

Definitions

- **General Electrical Supply**

“Electrical supply that is AC having normal frequency of 50 Hz and the standard voltage of;

(a) 240 volts between phase and neutral; and

(b) 415 volts between any 2 phase conductors of a 3 phase system”

- **Low Voltage**

“Single phase mains electrical supply.”

Definitions

-
- Agent of a manufacturer or importer
- “ A person who is authorised in writing by the manufacturers or importer to act in Australia as an agent of the manufacturer or importer”

**The rules are changing in the near future to greatly simplify the arrangements between agents, manufacturers and suppliers*

Definition

- **Description of a device**

“Sufficient information for a person to determine whether the device is the same as the device for which a DoC, test report or statement by a competent body was prepared”

May include a photograph or sketch or other pictorial representation of the device illustrating it's internal; and external aspects. (including printed circuit boards)



EMC Framework

- **Compliance Requirements**

- Establish sound technical grounds for compliance
- Register with the ACA as a supplier to use the C-Tick
- Prepare a Declaration of Compliance for each product and model
- Establish a Compliance Folder 
- Label the product as required, usually the C-Tick



EMC Scheme

Levels of Compliance

- **Level 1**, low interference risk on other devices.
 - E.g. manual switches, simple relays, brushless motors, heating elements.
- **Level 2**, Medium risk of interference on devices.
 - majority of products not included in Level 1
 - Eg. Switching Power Supply, microprocessor or clocked device, electronic transformer, motor speed controller, commutator or slip ring motor, lighting ballast, ITE
- **Level 3**, highest interference risk.
 - E.g. telecommunications, medical & some scientific



EMC Scheme

- **Level 1 - Compliance Folder Contents**
 - Voluntary, but if C-tick applied, must hold:
 - Declaration of Conformity (DoC)
 - Description of device
 - Technical specifications, drawings & circuits
 - Brochures (if available)
 - Apply C-tick label
 - Definition of Low Risk device is under review
 - Voluntary..... but must meet relevant standard !!!



EMC Scheme

-
- **Level 2 - Compliance Folder Contents**
 - Declaration of Conformity
 - Description of device
 - Technical specifications, drawings & circuits
 - Brochures (if available)
 - **Test report (or TCF) to show conformity with an applicable standard**



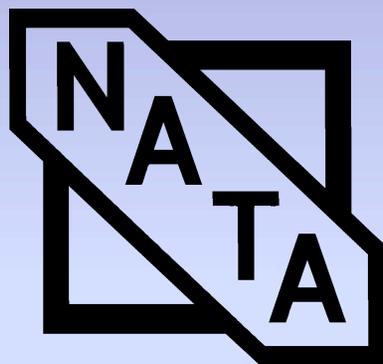
EMC Scheme

-
- **Level 3 - Compliance Folder Contents**
 - Declaration of Conformity
 - Product description
 - Technical specifications, drawings & circuits
 - Brochures (if available)
 - **NATA Accredited** test report (or TCF)

Contents of Test Report

- **The test report must address:**
 - The tests that were used: and
 - The result of those tests, including test data; and
 - Whether the results of the tests show that the device meets the applicable standard
 - The **procedures** of the applicable standard must be applied
- **Level 3 test reports must be NATA accredited or NATA MRA partner**

National Association Of Testing Authorities (NATA) Of Australia



(obsolete logo)



Testing performed properly!!

Who is NATA ?

National Association of
Testing Authorities (NATA)
of Australia

ISO 17025

ISO Guide 39

EN45004

ACMA

Europe

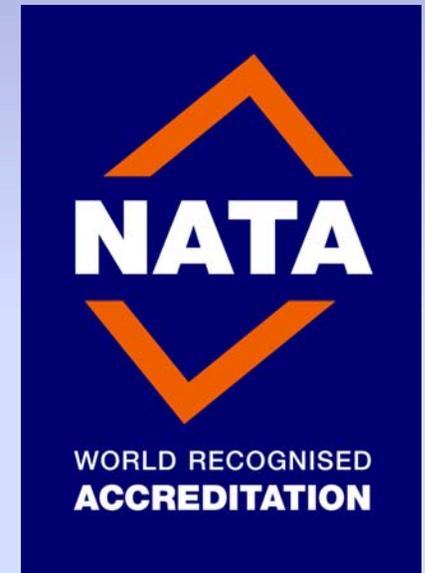
Testing

Inspection

Inspection

EMC Competent Body

Conformity Assessment Body



What is NATA Accreditation?

Peer assessment and regular audits of:

- Technical procedures
- Quality system for document control
- Competency of personnel
- Adequate instrumentation and facilities
- Calibration traceability



Why NATA??

- In the event of a dispute about the compliance of a site the ACA may request a NATA assessment
 - **at your cost**
- NATA provides the best due diligence defence





NATA MRA PARTNER LABORATORIES

-
- AUSTRIA
 - BELGIUM
 - DENMARK
 - FINLAND
 - FRANCE
 - GERMANY
DKD
 - IRELAND
 - ITALY
 - USA
 - UNITED KINGDOM
 - CHINA, HONG KONG
- BMwA
 - BELTEST, BKO-OBE
 - DANAK
 - FINAS
 - COFRAC
 - DACH, DAR, DATech,
 - NAB
 - SINAL, SIT
 - NVLAP, A2LA
 - UKAS, NAMAS
 - HOKLAS



NATA MRA PARTNER LABORATORIES Cont.

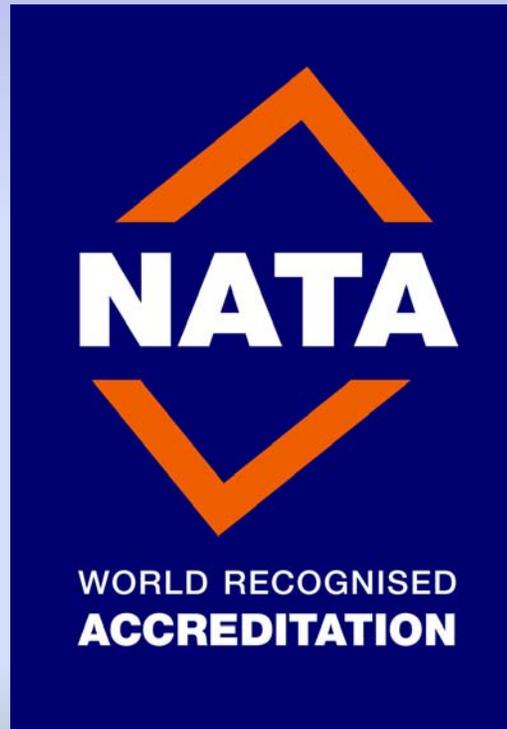
-
- JAPAN JAB, JNLA
 - KOREA KOLAS
 - NORWAY NA
 - PORTUGAL IPQ
 - SINGAPORE SAC-SINGLAS
 - SOUTH AFRICA SANAS
 - SPAIN ENAC
 - SWEDEN SWEDAC
 - SWITZERLAND SAS
 - TAIWAN CNLA
 - NEW ZEALAND IANZ (formerly TELARC)
 - NETHERLANDS RvA

NATA Accreditation Issues

(Not all NATA Facilities are the Same)



Old Logo



Scope of NATA Accreditation?



Acrobat Document

- NATA documents must be within NATA Scope of test lab
- Ask questions.....
 - “Will my test report be NATA endorsed?”
 - “Will it have any exclusions or conditions?”
 - “Does the NATA scope cover all limits & frequencies?”
 - “Does the NATA scope cover all tests to be conducted?”



Test Reports

-
- **Technical Certificates, Results Summary Sheets, DoC**
 - Technical certificates or result summary sheets issued by a test lab are **not acceptable** as alternative to test report under any circumstances
 - Declaration of Conformity (DoC) alone is not reliable evidence of compliance
 - Original hardcopy is often not available

Test Report Uses

- Document Compliance or Non-compliance
- Document Test Results
- Document Test Procedures
- Submit to Competent Body for Technical Construction File Assessment
- Protect Your Company & yourself

Test Report Contents

- List name & address of customer
- Include date of test and location of test site(s)
 - Name of lab, address, phone/fax, accreditation body
 - Statement that tests and report were in accordance with scope of accreditation with no deviations
- List standards used, full title and year
- Describe procedure used and any deviations from the standard.
- Each page of test report must be uniquely identified.

Test Report Contents

- Describe Equipment Under Tests (EUT)
 - Make, model, serial number, variants
 - Photographs of EUT and test configuration
 - Operating mode during testing
 - Interface cable details, cable configuration etc.
- Describe Test and Support Equipment, Software versions, build status
- Describe units of measurement and if necessary, provide sample calculations
- Provide estimated measurement uncertainty of test results
- Graphical representation of test results

Test Report Contents

- Unequivocal statement of compliance
- Signatures / Dates / Titles of responsible persons
- Statement that results apply only to the item tested (*not necessarily all production items*)
- Statement that test report can only be duplicated in its entirety unless written permission is given for approved extract
- For CISPR22, the 6 highest conducted and radiated emissions closest to the limits within 20 dB of the limit.

Endorsed report or Non-endorsed report?

- Endorsement of test reports is through a Laboratory Accreditation Scheme with allows for report recognition and portability (e.g. NATA, ILAC, CB Scheme).
- Greatest confidence is gained through independent testing by an accredited laboratory.
- The issues of litigation and regulatory requirements determine the source of test reports.
- Not all self-declaration schemes allow the use of internal or non-endorsed test reports.

ACMA Report Requirements

-
- Must be in English
 - The most common form of test report recognition is through ILAC which recognizes Laboratory accreditation by NATA
 - Private marks or certificates eg. TUV, UL & CSA are not recognised - **Must have reports**
 - Original not necessary but must be clear copy
 - Electronic copy OK but hard copy must be provided on request of regulator



TCF Route to Compliance

- **Technical Construction File (TCF)**

Alternative in <math><0.01\%</math> cases



- **Use TCF when :**

- Too difficult to test due to physical characteristic of device, or its location
- Too many variants of the product

- **Contents :**

- technical data for assessment by a Competent Body

- **Don't spend a fortune NOT TESTING your product!!**



EMC Scheme

-
- **Contents of a Technical Construction File**
 - Technical and design data to minimise emissions, for assessment by a Competent Body
 - Statement by a Competent Body
 - Technical rationale for use of a TCF
 - Product description, technical specifications, drawings & circuits
 - Reports issued by a Competent Body
 - **Usually need assistance to prepare first TCF.**

Competent Body

-
- A competent Body approves TCFs
 - Competent Body
 - Cannot absolve EMC sins
 - Cannot turn fail into pass
 - Assessor must not be involved in the testing
 - Competent Body (TCF Route) rarely used
 - << 1% of cases
 - Useful for large, hard to test, or complex industrial projects

Competent Body

-
- 2 types of Competent Body (CB)
 - Consultant CB
 - No testing infrastructure
 - NATA accreditation for inspection but not testing
 - Test house CB
 - NATA accredited testing
 - NATA accredited CB

Role of Test House

- Test worst case
- Supplier assumes responsibility
- Choose test house accredited for your standard
- Ensure no exclusions in accreditation scope



C-tick Conditions of Use

- C-tick is registered trademark in Australia/NZ
- Must be used per regulations
- Must have written permission to use it
- No registration fee
- Illegal to sell level 2 or level 3 products without applying the C-tick



Labelling Requirements

- The product must be labelled with the C-Tick mark and unique supplier identification before marketing
 - eg. **N9876 (>3mm high)**
- **Supplier identification :**
 - ACA/RSM Supplier Code Number
 - ACN, ABN, GSTN, ARBN
 - Company name & address
 - Australian registered Trademark.
 - Personal name and address
 - Trademark
- **Not transferable**



Location of Label

- Must be permanent, on external surface, near as practical to model identification
- If not practical to place on external surface, then a label may be attached in the following order:
 - To outer surface of packaging, or if impractical,
 - To instructions for use, or if impractical,
 - To guarantee or certificates; and
 - The supplier must obtain written permission from ACA/RSM by giving reasons, and stating method of labelling
 - Keep relevant information in Compliance folder



Label Requirements

- Exact reproduction must be used
- Legible & visible to unaided eye, no smaller than 3 mm diameter.
- Supplier ID characters no less than 1 mm height
- Label to be durable
- Any colour but must be visible
- May be labelled any point prior to manufacture
- May be placed on promotional material

Who May Apply Compliance Labels?

-
- **Products manufactured in Australia**
 - Australian manufacturer
 - Authorized agent
 - Person authorized by manufacture or agent
 - Copy of authorization to be kept with compliance records
 - **Products manufactured Overseas**
 - Importer
 - Authorized agent in Australia/NZ
 - Overseas manufacturer authorized by importer or agent
 - Copy of authorization to be kept with compliance records



Regulatory Compliance Mark (RCM)

- The **RCM** is a trademark mark owned by Australian and New Zealand regulators.
- It indicates an electrical product complies with the requirements of the electrical regulations and EMC Scheme of Australia and New Zealand in accordance with **AS/NZS 4417** Parts 1, 2,3,4.
- Must register with Standards Australia and register with ACA



EMC for Telecoms

-
- **Emission Requirements only.**
 - **AS/NZS CISPR 22** (Australian/New Zealand)
 - EN 55022 (European)
 - CISPR 22 (European)
 - AS/NZS 3548 is now CISPR 22 = EN55022
 - ANSI C63.4 & FCC Part 15 not equivalent, (but close!!)



EMC for Telecoms

- **Residential Devices- Class B Limits**
-Modem, Fax, Phone, dialer
- **Commercial Devices -Class A limits**
-PABX, Routers, Business fax, ISP

Australia-New Zealand Use of A-tick



- **Not yet harmonised**
 - **Australia;** denotes compliance with telecommunications labelling notice **and** EMC.
 - **New Zealand:** Denotes EMC Compliance only.



EMC for Telecoms

- **Immunity Standards for Telecommunications:**
 - Currently not mandatory for Australia.
 - ACMA have indicated that this may be a requirement in the future.
 - Carrier contracts or endorsements often require immunity compliance as a condition
 - Eg. ADSL, Headsets, ISDN, Network Gear



Compliance Records

-
- Compliance folder must be kept
 - Contents depends on Compliance level, but includes
 - Test reports (or TCF)
 - A description that positively identifies product
 - Brand name, model number, etc. Photos, block diagram
 - Drawings and/or circuit diagrams; and
 - A signed Declaration of Conformity (DoC)
 - Can be electronic but hardcopy must be available at audit
 - Can be stored overseas once examined by supplier
 - Must be produced within 10 days of request
 - Must be retained for 5 years from last date of supply

Enforcement

- **Audits triggered by;**
 - Random selection from database
 - Receipt of written complaint
 - Products identified at retail outlets or advertising material
 - Interference to communications and broadcast services
 - Competitor testing and checking

What Happens at Audit?

- Written notice supplied with minimum of 10 days notice
- Compliance Folder (all compliance records) examined
- If conformity evidence not satisfactory, and compliance called into question, auditor may request;
 - Additional documentation
 - Submission of 3 samples selected by ACA/RSM to NATA/IANZ lab nominated by ACA/RSM

Penalties

- Prohibition of supply
- Seizure and forfeiture of stock (Aust), or compulsory recall (NZ)
- On the spot fines
- Prosecution
- Embarrassment & bad publicity

Examples of Penalties

- **Supply of Non-standard equipment**
 - Individual : \$13,000
 - Corporate : \$160,000
- **False Statement:**
 - Individual: \$11,000
 - Corporate: \$ 55,000
- **Sale without label, label without compliance**
 - Individual: \$11,000
 - Corporate: \$55,000
- **Knowingly causing interference**
 - **12 months jail** + fines



More Information

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Australian Communications and Media Authority (ACMA)

Mandatory EMC Standards

9 AS/NZS EMC Standards + European Standards

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AS/NZS 61000-6-3	Generic standard, commercial, light industry and residential. Covers other products not subject to the above standards.
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Appendix A

**European Norm (EN) Mandatory
Standards
EMC Compliance Scheme**

Only Emission aspects of the EN standards are mandated

-
- Scope of the standards;
 - EMC phenomenon of emitted disturbance associated with:
 - Conducted (continuous and intermittent) radio-frequency disturbance
 - Radiated radio-frequency disturbance
 - **Test procedures and requirements** associated with the above EMC phenomenon

2. EN 61000-6-3 Residential, commercial and light industry (I)

- **Product Scope**

- Electrical /electronic apparatus for use in residential, commercial & light-industrial environment
- For which no dedicated product or product-family emission standard exists
- Apparatus designed to radiate EM energy for radio communication purposes is excluded
- Frequency range 0 Hz - 400 GHz

2. EN 61000-6-3: Residential, commercial and light industry (II)

- **Technical Matters**

- EN 61000-6-3 is identical to AS/NZS 61000-6-3
- AS/NZS 61000-6-3 is an ACA mandated standard and is recognised in the EMC compliance scheme (refer Section 3)

3. EN 50091-2:1995 Uninterruptible power systems (UPS) (I)

-
- **Product Scope**
 - Single UPS units / UPS systems comprising a number of interconnected UPS & associated control/switchgear forming a single power system, intended to be installed in any operator accessible area or in separated electrical locations, connected to either industrial or public low voltage supply networks

3. EN 50091-2:1995 Uninterruptible power systems (UPS) (II)

- **Technical Matters**
 - UPS products are classified in two ways for the analysis of electromagnetic emissions:
- a) **UPS for unrestricted sales distribution**
 - Harder emission limits. Products in this category are classified as class A-UPS or class B-UPS
- **Class A-UPS**
 - UPS suitable for use other than domestic and those directly connected to a low voltage public supply network, which supplies buildings used for domestic purposes

3. EN 50091-2:1995 Uninterruptible power systems (UPS) (III)

- Class B-UPS
 - UPS suitable for use in all establishments including domestic and connected to a public low voltage network
- b) UPS for restricted sales distribution
 - Customers and users with a high technical competence. This implements higher emission limits. The manufacturer and customer have to ensure the essential EMC protecting requirement for the specific resulting installation by choice of emission limits or by measurements 'in-situ' together have different equipment and boundary conditions.

4. EN 50148:1995

Electronic taximeters (I)

- **Product Scope**
 - Electronic taximeters installed on taxis or cabs which, with the aid of electronic devices, calculate and indicate the amount to be paid by the passenger
 - Standard does not apply to taximeters being remotely controlled by external intelligence

4. EN 50148:1995

Electronic taximeters (II)

- **Technical Matters**

- EMC tests as per EN 55022 Class B with the following requirements:

30-230MHz 30 dB $\mu\text{V}/\text{m}$

230-1000 MHz 37dB $\mu\text{V}/\text{m}$

- Measurement distance - 10 metres

5. EN 50199:1995

Arc welding equipment (I)

- **Product Scope**

- Equipment for arc welding and allied processes
- For use in industrial and domestic establishments
- Included are welding power sources, wire feeders and ancillary equipment, e.g water coolers and arc striking and stabilizing devices.

5. EN 50199:1995

Arc welding equipment (II)

- **Technical Matters**
 - Standard EN 50199:1995 is identical to AS/NZS 3652 (Int):1996
 - Standard AS/NZS 3652 (Int) 1996 has been mandated by the ACA and is recognised in its EMC compliance scheme (refer Section 3).

8. EN 50270:1999 Electrical apparatus for detection & measurement of combustible gases, toxic gases or oxygen

- **Product Scope**
- Electrical apparatus for detection & measurement of combustible gases toxic gases or oxygen
- Applies to residential, commercial, light industrial and industrial environments
- Apparatus may be a.c., d.c.or battery powered
- Applicable to apparatus which is intended for use in hazardous areas which may contain explosive or potentially explosive atmospheres

9. EN 55011:1998 Amdt. A1:1999 ISM RF equipment

-
- **Product Scope**
 - Industrial, scientific and medical (ISM) equipment, and to spark erosion equipment
 - **Technical Matters**
 - Standard EN 55011:1998 is identical to AS/NZS 2064 and is similar to CISPR 11.
 - Standard AS/NZS 2064 has been mandated by the ACA and is recognised in its EMC compliance scheme (refer Section 3)

10. EN 55013:1990 Amdt. A12:1994, A13:1996, A14:1999 Broadcast receivers & associated equipment (I)

- **Product Scope**

- Sound and television receivers for the reception of broadcast and similar transmissions and from associated equipment
- Frequency range 9 kHz - 18 GHz
- Information technology equipment (ITE) is excluded
 - Even if intended to be connected to a television broadcast receiver

10. EN 55013:1990 Amd. A12:1994, A13:1996, A14:1999 Broadcast receivers & associated equipment (II)

- **Technical Matters**

- Standard EN 55013 is identical to AS/NZS 1053 and is similar to CISPR 13.
- Standard AS/NZS 1053 has been mandated by the ACA and is recognised in its EMC compliance scheme (refer to Section 3).

11. EN 55014-1:1993 Amd. A1:1997, A2:1999 Household appliances, electric tools & similar apparatus (I)

- **Product Scope**

- Appliances whose main functions are performed by motors and switching or regulating devices,
- Equipment such as: household electrical appliances, electrical tools, regulating controls using semiconductor devices, motor-driven electro-medical apparatus, electric toys, automatic dispensing machines, cine or slide projectors

11. EN 55014-1:1993 Amd. A1:1997, A2:1999 Household appliances, electric tools & similar apparatus (II)

- **Technical Matters**

- Standard EN 55014-1 standard is identical to AS/NZS 1044.
- Standard AS/NZS 1044 has been mandated by the ACA and is recognised in its EMC compliance scheme (refer to Section 3)

12. EN 55015:1996 Amdt. A1:1997, A2:1999 Electrical lighting and similar equipment (I)

- **Product Scope**

- all lighting equipment with a primary function of generating and/or distributing light for illumination purposes, and connection to the low voltage electricity supply or battery operation
- the lighting part of multi-function equipment where one of the primary functions of this is illumination

12. EN 55015:1996 Amdt. A1:1997, A2:1999 Electrical lighting and similar equipment (II)

- **Product Scope**
- independent auxiliaries exclusively for use with lighting equipment;
 - UC and IR radiation equipment
 - neon advertising signs
 - street/flood lighting intended for outdoor use
 - transport lighting (installed in buses and trains)

12. EN 55015:1996 Amd. A1:1997, A2:1999 Electrical lighting and similar equipment (III)

- **Technical Matters**

- Standard EN 55015 is identical to AS/NZS 4051.
- Standard AS/NZS 4051 has been mandated by the ACA and is recognised in its EMC compliance scheme (refer to Section 3).

13. EN 55022:1994 Amd. A1:1995, A2:1997 Information technology equipment (I)

- **Product Scope**

- Information Technology Equipment
- Procedures for the measurement of EMI
- Limits specified
 - Frequency range 9 kHz - 400 GHz
 - For both Class A and Class B equipment



13. EN 55022:1994 Amd. A1:1995, A2:1997 Information technology equipment (II)

- **Technical Matters**

- Standard EN 55022 and amendments are equivalent to AS/NZS 3548 and amendments.
- It is also equivalent to CISPR 22
- Standard AS/NZS 3548 has been mandated by the ACA and is recognised in its EMC compliance scheme (refer to Section 3)



14. EN 55103-1:1996 Audio, video, audio-visual & entertainment lighting control apparatus for professional use (I)

- **Product Scope**

- Professional audio, video, audio-visual and entertainment lighting control apparatus

14 EN 55103-1:1996 Audio, video, AV & entertainment lighting control apparatus for professional use (II)

- **Technical Matters**

- The standards sets limits for the following five environments; known as

- E1 residential
 - E2 commercial and light industrial
 - E3 urban outdoors
 - E4 controlled EMC environment (eg, purpose built broadcasting or recording studio), & rural outdoors
 - E5 heavy industry; close to broadcast transmitters

14 EN 55103-1:1996 Audio, video, AV & entertainment lighting control apparatus for professional use (III)

- **Technical Matters**
- The EMC disturbance phenomena proposed to be mandated by the ACA are:
 - Enclosure port; r.f. fields, 30 MHz - 1GHz
 - a.c power port; conducted emissions; 0.15 - 30MHz
 - a.c power port; conducted emissions 'clicks' 0.15 -30MHz
 - Antenna terminals of broadcast radio & TV receivers; conducted emissions; 30 MHz - 1GHz
 - Signal, d.c., & control ports, conducted emissions; 0.15 - 30 MHz



15. EN 60204-31:1998 Safety of machinery - Part 31: sewing machines, units and systems

Product Scope

Sewing machines, units and systems, designed specifically for professional use

Technical matters

The EMC requirements of EN 55011 apply

45. EN 61008-1:1995 Amd. No A2 & A11 Residual current operated circuit-breakers w/o integral overcurrent protection

- **Product Scope**

- Residual current operated circuit-breakers
(RCCB's) for household and similar uses

- Not incorporating overcurrent protection for rated voltages \leq 440 V a.c. & rated currents \leq 125 A for fixed installation, intended principally for protection against shock-hazard

- **Technical matters**

- Radiated & conducted emission requirements as per EN 61543:1995

46. EN 61036:1996 Amd. A1:2000 a.c. static watt-hour meters for active energy (classes 1 & 2)

- **Product Scope**

- Static watt-hour meters

- accuracy classes 1 and 2
 - For the measurement of a.c. electrical active energy of frequency range 45 Hz - 65 Hz

- **Technical matters**

- Radiated & conducted emission requirements as per CISPR 22 class B equipment

48. EN 61038:1992 Amendment A1:1996, A2:1998 Time switches for tariff and load control

- **Product Scope**

- Indoor time switches with operation reserve that are used to control electrical loads, multi-tariff registers and maximum demand devices
 - This standard does not apply to time switches operated by remote control /synchronised by RF

- **Technical matters**

- Radiated & conducted emission requirements as per CISPR 22 class B equipment

Appendix B

IEC & CISPR Standards

Mandatory ACA Standards

IEC and CISPR STANDARDS

- A list of IEC/CISPR standards proposed to be mandated by the ACA together with a synopsis of these standards
- The ACA is proposing only to mandate the following aspects :
 1. Scope of the standards
 - 2. EMC phenomenon:
 - Conducted radio-frequency disturbance
 - Radiated radio-frequency disturbance
 3. Test procedures & requirements for EMC

3. IEC 60204-31

-
- **Safety of machinery – Electrical equipment of machines-
Part 31: Particular safety and EMC requirements for sewing machines, units and systems**
 - The EMC requirements of this standard are equivalent to EN 60204-31:1998 (refer to Appendix A of this document).

6. IEC 60669-2-2:1996 Amendment A1:1997 to IEC 60669-2-2

- **Switches for household and similar fixed electrical installations**
Part 2 Particular requirements
Section 2. Remote-control switches (RCS)
- The EMC requirements of this standard are equivalent to EN 60669-2-2:1997
 - (refer to Appendix A of this document).

8. IEC 60687

-
- **Alternating current static watt-hour meters for active energy (classes 0,2,S and 0,5 S)**
 - **The EMC requirements of this standard are equivalent to EN 60687:1992 (refer to Appendix A) and AS 1284.9.**

9. IEC 60730-1

- **Automatic electrical controls for household and similar use-
Part 1: General requirements**
- The EMC requirements of this standard are equivalent to EN 60730-1:1995 (refer to Appendix A of this document).

10. IEC 60730-2-5

-
- **Automatic electrical controls for household and similar use-
Part 2: Particular requirements for automatic electrical burner control systems**
 - The EMC requirements of this standard are equivalent to EN 60730-2-5:1995 (refer to Appendix A of this document).

11. IEC 60730-2-6:1991 Amendment A1:1994 to IEC 60730-2-6:1991

- **Automatic electrical controls for household and similar use-
Part 2: Particular requirements for automatic electrical pressure sensing controls including mechanical requirements.**
- **The EMC requirements of this standard are equivalent to EN 60730-2-6:1995 (refer to Appendix A of this document).**

12. IEC 60730-2-7:1990 Amendment A1:1994 to IEC 60730-2-7:1990

- **Automatic electrical controls for household and similar use-
Part 2 Particular requirements for
timers and time switches**
- **The EMC requirements of this standard
are equivalent to EN 60730-2-7:1991
(refer to Appendix A of this documnt).**

13. IEC 60730-2-8

-
- **Automatic electrical controls for household and similar use-
Part 2: Particular requirements for electrically operated water valves, including mechanical requirements**
 - The EMC requirements of this standard are equivalent to EN 60730-2-8:1995 (refer to Appendix A of this document).

14. IEC 60730-2-9

-
- **Automatic electrical controls for household and similar use-**

Part 2: Particular requirements for temperature sensing controls

- **The EMC requirements of this standard are equivalent to EN 60730-2-9:1995 (refer to Appendix A of this document).**

15. IEC 60730-2-11

-
- **Automatic electrical controls for household and similar use-
Part 2: Particular requirements for energy regulators**
 - The EMC requirements of this standard are equivalent to EN 60730-2-11:1993 (refer to Appendix A of this document).

16. IEC 60730-2-13

-
- **Automatic electrical controls for household and similar use-
Part 2: Particular requirements for humidity sensing controls**
 - The EMC requirements of this standard are equivalent to EN 60730-2-13:1998 (refer to Appendix A of this document).

17. IEC 60730-2-14

-
- **Automatic electrical controls for household and similar use --
Part 2: Particular requirements for electric actuators**
 - The EMC requirements of this standard are equivalent to EN 60730-2-14:1997 (refer to Appendix A of this document).

18. IEC 60730-2-18

- **Automatic electrical controls for household and similar use-**

Part 2: Particular requirements for automatic electrical water and air flow sensing controls, including mechanical requirements

- The EMC requirements of this standard are equivalent to EN 60730-2-18:1999 (refer to Appendix A of this document).

19. IEC 60870-2-1

-
- **Telecontrol equipment and systems**
Part 2. Operating conditions
Section 1. Power supply and
electromagnetic compatibility
 - The EMC requirements of this standard are equivalent to EN 60870-2-1:1996 (refer to Appendix A of this document).

20. IEC 60945

-
- **Maritime navigation and radiocommunication equipment and systems-**
General requirements-
Methods of testing and required test results
 - The EMC requirements of this standard are equivalent to EN 60945:1997 (refer to Appendix A of this document).

21. IEC 60947-1

-
- **Low-voltage switchgear and controlgear –
Part 1: General rules**
 - The EMC requirements of this standard are equivalent to EN 60947-1:1999 (refer to Appendix A of this document).

22. IEC 60947-2

-
- **Low-voltage switchgear and controlgear-
Part 2: Circuit-breakers**
 - The EMC requirements of this standard are equivalent to EN 60947-2:1996 (refer to Appendix A of this document).

23. IEC 60947-3

-
- **Low-voltage switchgear and controlgear-**
Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units
 - The EMC requirements of this standard are equivalent to EN 60947-3:1992 (refer to Appendix A of this document).

24. IEC 60947-4-1

-
- **Low-voltage switchgear and controlgear-
Part 4-1: Contactors and motor-starter-
Electromechanical contactors and motor-
starters**
 - The EMC requirements of this standard are equivalent to EN 60947-4-1:1992 (refer to Appendix A of this document).

25. IEC 60947-4-2

-
- **Low-voltage switchgear and controlgear-
Part : Contactors and motor-starters-
Section 2: A.C. semiconductor motor
controllers and starters**
 - The EMC requirements of this standard are equivalent to EN 60947-4-2:1996 (refer to Appendix A of this document).

26. IEC60947-4-3

-
- **Low-voltage switchgear and controlgear-
Part 4-3: Contactors and motor-starters-
AC semiconductor controllers and
contactors for non-motor loads**
 -
 - The EMC requirements of this standard are equivalent to EN 60947-4-3:2000 (refer to Appendix A of this document).

27. IEC 60947-5-1

-
- **Low-voltage switchgear and control-
Part 5-1: Control circuits devices and
switching elements –
Electromagnetic control circuit
devices**
 - The EMC requirements of this standard are equivalent to EN 60947-5-1:1997 (refer to Appendix A of this document).

28. IEC 60947-5-2

-
- **Low-voltage switchgear and controlgear-
Part 5-2: Control circuit devices and switching elements – Proximity switches**
 - The EMC requirements of this standard are equivalent to EN 60947-5-2:1997 (refer to Appendix A of this document).

29. IEC 60947-5-3

-
- **Low-voltage switchgear and controlgear-
Part 5-3: Control circuits devices and
switching elements – Requirements for
proximity devices and defined behaviour
under fault conditions (PDF)**
 - The EMC requirements of this standard are equivalent to EN 60947-5-3:1999 (refer to Appendix A of this document).

30. IEC 60947-5-6

-
- **Low-voltage switchgear and controlgear-
Part 5-6: Control circuits devices and
switching elements – DC interface for
proximity sensors and switching amplifiers
(NAMUR)**
 - The EMC requirements of this standard are equivalent to standard EN 60947-5-6 (refer to Appendix A of this document).

31. IEC 60947-6-1

-
- **Low-voltage switchgear and controlgear-
Part 6-1: Multiple function equipment –
Automatic transfer switching equipment**
 - The EMC requirements of this standard are equivalent to EN 60947-6-1:1991 (refer to Appendix A of this document).

32. IEC 60947-6-2

-
- **Low-voltage switchgear and controlgear-
Part 6-2: Multiple function equipment –
Control and protective switching devices
(or equipment) (CPS)**
 - The EMC requirements of this standard are equivalent to EN 60947-6-2:1993 (refer to Appendix A of this document).

33. IEC 61008-1

-
- **Electrical accessories – Residual current operated circuit-breakers**

**Without integral overcurrent protection for household and similar uses (RCCB's)-
Part 1: General Rules**

- The EMC requirements of this standard are equivalent to EN 61008-1:1994 (refer to Appendix A of this document).

34. IEC 61036

-
- **Alternating current static watt-hour meters for active energy (classes 1 and 2)**
 - The EMC requirements of this standard are equivalent to EN 61036:1996 (refer to Appendix A of this document).

35. IEC 61037

-
- **Electricity metering – Tariff and load control-**

Particular requirements for electronic ripple control receivers.

- **The EMC requirements of this standard are equivalent to EN 61037:1992 (refer to Appendix A of this document).**

36. IEC 61038

-
- **Electricity metering – Tariff and load controls –
Particular requirements for time switches**
 - The EMC requirements of this standard are equivalent to EN 61038:1992 (refer to Appendix A).

37. IEC 61268

-
- **Alternating current static var-hour meters for reactive energy (classes 2 and 3)**
 - **The EMC requirements of this standard are equivalent to EN 61268:1996 (refer to Appendix A).**

38. IEC 61326

-
- **Electrical equipment for measurement, control and laboratory use – EMC requirements**
 - The EMC requirements of this standard are equivalent to EN 61326:1997 (refer to Appendix A).

39. IEC 61543

-
- **Residual current-operated protective devices (RCDs) for Household and similar use – Electromagnetic compatibility**
 - The EMC requirements of this standard are equivalent to EN 61543:1995 (refer to Appendix A).

40. IEC 61800-3

-
- **Adjustable speed electrical power drive systems –
Part 3: EMC product standard
including specific test methods**
 - The EMC requirements of this standard are equivalent to EN 61800-3:1996 refer to Appendix A).

41. IEC 61812-1

-
- **Specified time relays for industrial use –
Part 1: Requirement and tests**
 - The EMC requirements of this standard are equivalent to EN 61812-1:1996 (refer to Appendix A).

42. CISPR 11

-
- **Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement.**
 - This standard is equivalent to standard AS/NZS 2064 mandated by the ACA and recognised in its EMC arrangements (refer to Section 3).

43. CISPR 12

- **Vehicles, motorboats, and spark-ignited engine-driven devices – Radio disturbance characteristics – Limits and methods of measurement**
- This standard is equivalent to standard AS/NZS 2557 mandated by the ACA and recognised in its EMC arrangements (refer to Section 3). The ACA applies AS/NZS 2557 to all engine-driven devices other than road registrable vehicles. These same arrangements will also be applied to CISPR 12.

44. CISPR 13

-
- **Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment**
 - This standard is equivalent to standard AS/NZS 1053 mandated by the ACA and recognised in its EMC arrangements (refer to Section 3).

45. CISPR 14-1

-
- **Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission – Product family standard.**
 - This standard is equivalent to standard AS/NZS 1044 mandated by the ACA and recognised in its EMC arrangements (refer to Section 3).

46. CISPR 15

-
- **Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.**
 - This standard is equivalent to standard AS/NZS CISPR 15 mandated by the ACA and recognised in its EMC arrangements (refer to Section 3).

47. CISPR 22:1997 Amendment A1: 2000

- **Information technology equipment
– Radio disturbance characteristics –
Limits and methods of measurement**
- This standard is equivalent to superseded standard AS/NZS 3548.

48. IEC 61000-6-3

-
- ***Electromagnetic compatibility (EMC) – Part 6***
Generic standard – Section 3
Emission standard for residential, commercial and light –industry environments.
 - The EMC requirements of this standard are equivalent to superseded standards AS/NZS 4251.1 and EN 50081-1.



Appendix C

**Transitional Arrangements
for the
European Norm (EN) Standards
Proposed to be Adopted by the
ACA**



Harmonised EMC Standards and their 'Phase-in'/Phase-out' Arrangements

- Summary list of titles and references of harmonised European Norm (EN) standards recognised under the European Union EMC scheme and proposed to be recognised by the ACA
- The list details the 'phase-in/phase-out' transitional requirements that apply to 'new' and superseded standards



EN 50065-1:1991 Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Pt 1 : General requirements, frequency bands & EM disturbances

European Standards Body	Reference and title of the standard	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 50065-1:1991	NONE	-
	Amendment A1:1992 to EN 50065-1:1991	Note 3	Date expired (01.12.1994)
	Amendment A2:1995 to EN 50065-1:1991	Note 3	Date expired (01.10.1995)
	Amendment A3:1996 to EN 50065-1:1991	Note 3	Date expired (01.03.1997)

EN Standards (Various)

European Standards Body	Reference and title of the standard	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 50081-1:1992 Electromagnetic compatibility - Generic emission standard -- Part 1: Residential, commercial and light industry	NONE	-
CENELEC	EN 50091-2:1995 Uninterruptible power systems (UPS) - Part 2: EMC requirements	Relevant generic standard(s) Note 2.3	Date expired (01.03.1999)
CENELEC	EN 50148:1995 Electronic taximeters	Relevant generic standard(s) Note 2.3	Date expired (15.12.1995)

EN Standards (various)

European Standards Body	Reference and title of the standard	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 50227:1997 Control circuit devices and switching elements proximity sensors, d.c. interface for proximity sensors and switching amplifiers (NAMUR)	Relevant generic standard(s) Note 2.3	Date expired (01.04.1998)
CENELEC	EN 50263:1999 Electromagnetic compatibility (EMC) - Product standard for measuring relays and protection equipment	Relevant generic standard(s) Note 2.3	01.08.2002
CENELEC	EN 50270:1999 Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen	Relevant generic standard(s) Note 2.3	01.10.2001

EN 55011

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 55011:1991 Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment	CISPR 11:1990 (Modified)	NONE	-
	Amendment A2:1996 to EN 55011:1991	CISPR 11:1990 /A2:1996	Note 3	Date expired (01.01.1998)
	Amendment A1:1997 to EN 55011:1991	CISPR 11:1990 /A1:1996 (Modified)	Note 3	Date expired (01.01.1998)
CENELEC	EN 55011:1998 Industrial, scientific and medical (ISM) radio-frequency equipment - Radio disturbance characteristics - Limits and methods of measurement	CISPR 11:1997 (Modified)	EN 55011:1991 and its amendments Note 2.1	01.01.2001
	Amendment A1:1999 to EN 55011:1998	CISPR 11:1997 /A1:1999	Note 3	01.08.2002

EN 55013

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 55013:1990 Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	CISPR 13:1975 + A1:1983 (Modified)	NONE	-
	Amendment A12:1994 to EN 55013:1990		Note 3	Date expired (31.12.1998)
	Amendment A13:1996 to EN 55013:1990		Note 3	Date expired (01.06.1999)
	Amendment A14:1999 to EN 55013:1990		Note 3	01.08.2001

EN 55014-1

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 55014-1:1993 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission - Product family standard	CISPR 14- 1:1993	EN 55014:1987 +A2:1990 Note 2.1	Date expired (31.12.1995)
	Amendment A1:1997 to EN 55014-1:1993	CISPR 14- 1:1993 /A1:1996	Note 3	Date expired (01.01.1998)
	Amendment A2:1999 to EN 55014-1:1993	CISPR 14- 1:1993 /A2:1998	Note 3	01.10.2001

EN 55015

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 55015:1996 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	CISPR 15:1996	EN 55015:1993 Note 2.1	Date expired (01.01.2000)
	Amendment A1:1997 to EN 55015:1996	CISPR 15:1996 /A1:1997	Note 3	Date expired (01.01.2000)
	Amendment A2:1999 to EN 55015:1996	CISPR 15:1996 /A2:1998	Note 3	01.10.2001

EN 55022

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 55022:1994 Limits and methods of measurement of radio disturbance characteristics of information technology equipment	CISPR 22:1993	EN 55022:1987 Note 2.1	Date expired (31.12.1998)
	Amendment A1:1995 to EN 55022:1994	CISPR 22:1993 /A1:1995	Note 3	Date expired (31.12.1998)
	Amendment A2:1997 to EN 55022:1994	CISPR 22:1993 /A2:1996 (Modified)	Note 3	Date expired (31.12.1998)
CENELEC	EN 55022:1998 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	CISPR 22:1997 (Modified)	EN 55022 :1994 & its amendments Note 2.1	01.08.2001

EN 55103-1

European Standards Body	Reference and title of the standard	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 55103-1:1996 Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Part 1: Emission	Relevant generic standard(s) Note 2.3	Date expired (01.09.1999)

EN 60204-31

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 60204-31:1998 Safety of machinery - Electrical equipment of machines - Part 31: Particular safety and EMC requirements for sewing machines, units and systems	IEC 60204-31:1996 (Modified)	Relevant generic standard(s) Note 2.3	01.06.2002

EN 60687

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 60687:1992 Alternating current static watt-hour meters for active energy (classes 0,2 S and 0,5 S)	IEC 60687:1992	Relevant generic standard(s) Note 2.3	Date expired (01.06.1993)

EN 60945

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 60945:1997 Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	IEC 60945:1996	EN 60945:1995 Note 2.1	Date expired (01.09.1997)

EN 60947-1

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 60947-1:1997 Low-voltage switchgear and controlgear - Part 1: General rules Note 6	IEC 60947-1:1996 (Modified)	EN 60947-1:1991 +A11:1994 Note 2.1	Date expired (01.06.1998)
CENELEC	EN 60947-1:1999 Low-voltage switchgear and controlgear - Part 1: General rules Note 6	IEC 60947-1:1999 (Modified)	EN 60947-1:1997 Note 2.1	01.11.2001

EN 61008-1

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61008-1:1994 Electrical accessories - Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) -Part 1: General rules	IEC 61008-1:1990 + A1:1992 (Modified)	-	-
	Amendment A2:1995 to EN 61008-1:1994	IEC 61008-1:1990 /A2:1995	Relevant generic standard(s) Note 2.3	Date expired (01.07.2000)
	Amendment A14:1998 to EN 61008-1:1994		Relevant generic standard(s) Note 2.3	01.01.2001

EN 61036

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61036:1996 Alternating current static watt-hour meters for active energy (classes 1 and 2)	IEC 61036:1996	EN 61036:1992 Note 2.1	Date expired (01.06.1997)
	Amendment A1:2000 to EN 61036:1996	IEC 61036:1996 /A1:2000	Note 3	01.06.2003

EN 61037

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61037:1992 Electricity metering - Tariff and load control - Particular requirements for electronic ripple control receivers	IEC 61037:1990 (Modified)	NONE	-
	Amendment A1:1996 to EN 61037:1992	IEC 61037:1990 /A1:1996	Note 3	Date expired (01.12.1996)
	Amendment A2:1998 to EN 61037:1992	IEC 61037:1990 /A2:1998	Note 3	01.05.2001

EN 61326

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61326:1997 Electrical equipment for measurement, control and laboratory use - EMC requirements	IEC 61326:1997	Relevant generic standard(s) Note 2.3	01.07.2001
	Amendment A1:1998 to EN 61326:1997	IEC 61326:1997 /A1:1998	Note 3	01.07.2001

EN 61543

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61543:1995 Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility	IEC 61543:1995	Relevant generic standard(s) Note 2.3	Date expired (04.07.1998)

EN 61800-3

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61800-3:1996 Adjustable speed electrical power drive systems -- Part 3: EMC product standard including specific test methods	IEC 61800-3:1996	Relevant generic standard(s) Note 2.3	Date expired (01.04.1997)
	Amendment A11:2000 to EN 61800-3:1996		Note 3	01.01.2002

EN 61812-1

European Standards Body	Reference and title of the standard	Reference document	Reference of the superseded standard	Date of cessation of presumption of conformity of the superseded standard
CENELEC	EN 61812-1:1996 Specified time relays for industrial use - Part 1: Requirements and tests	IEC 61812-1:1996	-	-
	Amendment A11:1999 to EN 61812-1:1996		Relevant generic standard(s) Note 2.3	01.01.2002