

# **SPECTRUM COMPLIANCE ASIA**

## **4th RAIN RFID Alliance Meeting Grand InterContinental, Seoul Parnas 26-27 October 2015**

**Jacques Hulshof**  
**N.V. Nederlandsche Apparatenfabriek “Nedap”**  
**Groenlo, The Netherlands**  
[Jacques.Hulshof@nedap.com](mailto:Jacques.Hulshof@nedap.com)

# Presentation Contents

- 1. Company profile**
- 2. Committee memberships**
- 3. UHF in ASIA**
- 4. Documents for the approval process**
- 5. Specific counties**
  - 1. Australia**
  - 2. China, People's Republic of Republic of India**
  - 3. India, Republic of**
  - 4. Indonesia, Republic of**
  - 5. Japan**
  - 6. Korea, Republic of**
  - 7. Malaysia**
  - 8. New Zealand**
  - 9. Phillipines, Republic of the**
  - 10. Singapore, Republic of**
  - 11. Thailand**
  - 12. Vietnam, Socialist Republic of**



# Company Profile

**The N.V. Nederlandsche Apparatenfabriek “Nedap” (short: Nedap) was established in 1929  
Exchange-listed since 1947 and employs more than 750 people worldwide**

**Revenue : € 177,193 thousand**

**Profit : € 22,516 thousand (Before taxes)**

**Five Divisions with regard to SRD&RFID:**

- **Retail: EAS (8.2 MHz) + UHF RFID**
- **Security: RFID + Access Control 120 kHz+13.56 MHz**
- **Livestock Management: Cattle Code Identification RFID: 134.2 kHz; SRD 433 MHz; 50 kHz RTLS animals**
- **Light Controls: Remote SRD 2.45 GHz for light dimming in buildings and offices**
- **Nedap Identification Systems 868 MHz; UHF RFID; 2.45 GHz; 433 MHz**
- **Library: 13.56 MHz and mosst probably UHF**

**My responsibility: Radio -, EMC - and Safety Regulatory approvals worldwide**

# Committee Memberships

- Council Member of LPRA
- CENELEC TC 106x/WG3 (Human Exposure RFID/SRD/EAS)
- CENELEC TC106x/WG15 Implants and exposure to fields
- NEC EMF (Dutch Committee of TC106x)
- DKE 764 (German Committee of TC106x)
- NEC EMC (Dutch Committee IEC/CISPR)
- R&TTE CA (Radio&Telecomm. Terminal Equipm. Compliance Ass.)
- ISO/IEC JTC 1/SC31/WG4/SG3 (Item management for RF)
- ISO/IEC JTC 1/SC31/WG4
- ETSI TG34 EU Standards group dealing with the UHF band
- SRD-MG (Short Range Device Maintenance group)
- RAIN member



# **Spectrum Compliance ASIA UHF RFID**

## **General**

**Not being certified can mean custom  
- or border stop especially for  
UHF RFID systems**

**Reason:**

**Frequency band close  
to GSM frequency band**



# **Spectrum Compliance ASIA UHF RFID**

## **General**

- **Mandatory: RFID systems intended imported shall be type approved**
- **Devices are intended to operate in unprotected and shared frequency bands**
- **Its operation shall not cause interference to radio-communication services**
- **Tolerate any interference caused by other compliant radio-communication services, electrical or electronic equipment**
- **Devices shall be marked with the supplier/manufacturer's name**
- **Devices shall be marked with supplier/manufacturer's model or type reference**
- **The markings shall be legible and readily visible**
- **RFID appropriately type approved are exempted from individual licensing, only if otherwise noted**



# **Spectrum Compliance ASIA UHF RFID**

## **General**

- **RFID appropriately type approved are exempted from individual licensing, only if otherwise noted**
- **Type Approval granted on local testing or the basis of reports from accredited labs**
- **Type approval per product or product family**
- **Radio testing necessary, in some cases also EMC and Safety**
- **Acceptance of FCC grant & test reports or CE DoC & EU R&TTE (ETSI) test reports**
- **Most countries need local representatives**
- **No factory inspection**
- **Language of documents English, only if otherwise noted**



# Australia

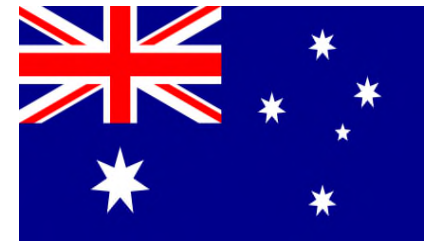


- Approval body: ACMA=Australian Communications and Media Authority
- Agency Website : [www.acma.gov.au](http://www.acma.gov.au)
- Regulation: AS NZS 4268: 2012+A1:2103 Radio equipment and systems-Short range devices: Limits and methods of measurement
- Frequency: 920-926 MHz: 4 Weirp or 918-926: 1 Weirp
- No local testing, no samples needed
- Family approval possible
- Human exposure assessment, EMC and Electrical Safety
- FCC (902-928 MHz) report not accepted, because outside the band 920-926 MHz
- Frequency within the 920-926 MHz translated Chinese report is accepted, but a recognized standard should be referenced FCC Part 15.247

**NOTE: EN 302 208 is not referenced**



# Australia



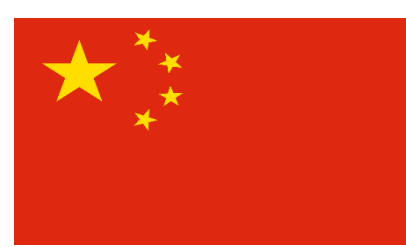
- Australian representative, ACMA registered, is allowed to grant C-Tick
- In our case we use consultant, fee is AU \$ 400, no ACMA fee
- Documents: RF report, EMC report, Human Exposure Assessment, Application form, Instruction manual
- Documents are delivered to consultant, who keeps these on file
- Lead time 1 week when reports are provided
- Marking c-tick
- Validity permanent



Product labelling

• NOTE:  $\text{erp in dBm} + 2.15 \text{ dB} = \text{eirp in dBm}$  or  $\text{erp in W} * 1.64 = \text{eirp in W}$

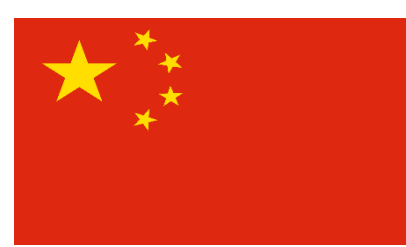
# People's Republic of China



- Approval body SRRC = State Radio Regulatory Commission
- Agency Website [www.srrccn.org](http://www.srrccn.org)
- Regulations not so very clear most information is from an APT (= Asia-Pacific Telecommunity) document: Referenced standard is EN 302 208
  - APT SURVEY REPORT ON OPERATION OF SHORT-RANGE DEVICES (SRDs)
- Frequency: 840.5-844.5\_920.5-924.5 MHz, Power: 2 Werp, (840-845-920-925 MHz, 100 mWerp) measurement conducted + Manufacturer declares ant. Gain
- Type approval granted on the basis of local tests
  - eg: - TJRMS= TainJin Radio Monitoring Station, SRTC= State Radio Testing Center
- 5 samples are required, 3 are tested
- Each model applying for certification, even electronics same, model name different
- No EMC, no Human Exposure, no CCC (electrical safety)



# People's Republic of China



- Local representative applies for SRRC certificate
- Witness testing possible important together with repres. who speaks Chinese
- Costs US \$ 4500 per first model, any additional model name: US \$ 4500 even when same electronics
- TCF: Manual, Schematic, Block diagram, Antenna spec, BoM, Photo internally/externally, Application forms, Label info
- Lead time 6 weeks
- 5 years expiration, can apply renew for another 3 years, then new project.
- Product labelling: CMIIT ID: 2015DJ9629 (DJ is Nedap's code with SRRC)

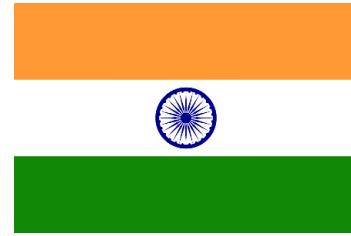
# Republic of India



- **Approval WPC = Wireless Planning & Coordination Wing**
  - **Part of: Ministry of Communications and Information Technology**
- **Agency Website [www.wpc.dot.gov.in](http://www.wpc.dot.gov.in) or [www.wpc.gov.in](http://www.wpc.gov.in)**
- **Regulations published “Gazette of India” as notifications**
- **Frequency: 865-867 MHz. Power: 1 W conducted and 4 Weirp (meaning 6 dBi ant. Gain)**
- **No local testing, no samples needed**
- **CE test report from accredited labs is accepted**
- **No family approval**
- **Future: may need electrical safety approval in India acc. to IS 13252(Part-1) = EN60950-1, BIS**



# Republic of India



- No samples needed
- Documents: Schematics, block diagram, BoM, internal/external photographs, application forms, test report, operational description
- Lead time 8 weeks
- Appointed representative
- Costs: US \$1100/model
- Example no family approval Electronic the same end product with 7 different caps  
Total approval costs: totally 7 X US \$ 1000 = US \$ 7700!!!
- Validity permanent, unless revisions
- No special sign for product labelling just Brand and Model

Cap  
Electronics



# Republic of Indonesia



- Approval body SDPPI=Direktorat Jenderal Sumber Daya Dan Perangkat Pos Dan Informatika, or DGTP=Directorate General of Posts and Telecommunication
- Agency Website <http://www.postel.go.id/>
- Regulations KEPDIRJEN No.221/DIRJEN/2007
- Frequency: 923-925 MHz Power: 2 Werp, Embedded Antenna, Gain 6dBi
- Type approval granted on the basis of local tests, 2 units required
- No family approval
- EMC and Safety voluntary



# Republic of Indonesia



- **Costs US \$ 3500 per first model, any additional model name: US \$ 3500 even when same electronics**
- **Documents: Application form, Inspection form, Power of Attorney, General information, User manual, Installation guide, BoM, Hardware description, Block diagram, Component lay-out, test report\_certificate other country.**
- **No witness of testing**
- **Local applicant required**
- **Lead time 10—14 weeks**
- **3 years expiration, can apply to renew if no changes, otherwise new testing**

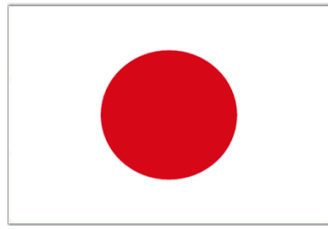
33794/SDPPI/2014

4506

**Product labelling**



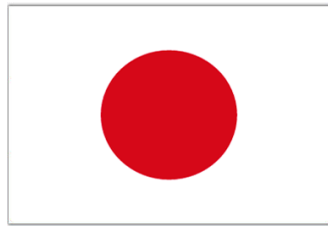
# Japan



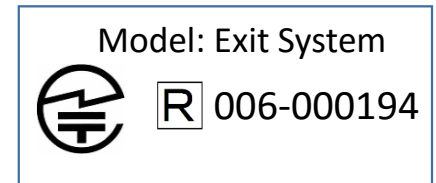
- Regulatory/Approval body MIC = Ministry of Internal Affairs and Communications
- MIC Radio Use Website: <http://www.tele.soumu.go.jp/e/>
- Various certification bodies (in - and outside Japan) are available:  
<http://www.tele.soumu.go.jp/e/sys/equ/tech/index.htm#4000052>
- Regulation: Radio Law (Law No. 131, 2 May 1950), ARIB STD 106,  
<http://www.arib.or.jp/english/>
- Frequency: 916,8;918,0;919,2;920,4 MHz. Power 1 W conducted tested, Ant. Gain 6 dBi, compensation possible for power and gain
- Type approval granted on the basis of local tests



# Japan



- Certification for family of products possible under certain conditions
- Costs ¥ 710,000 (US \$ 6000)
- Documents: User manual, schematics, block diagram, antenna specification, ISO 9001 certificates, parts layout, BoM, internal/external photographs, application forms, label location, operational description
- No Japanese applicant necessary, local re<sup>R</sup>presentative should be available because of language
- No witness of testing
- Local lab applies for MIC certificate
- Leadtime: 8 weeks
- Validity permanent



Product labelling



# Republic of Korea



- EMC testing also compulsory
- Approval body KCC = Korea Communications Commission
- Agency Website [www.kcc.go.kr](http://www.kcc.go.kr)
- Regulations “KCC Notice No. 2010-1\_RFID and USN\_900 MHz”
- Frequency: 917.3, 917.9, 918.5, 919.1, 919.7 and 920.3 MHz, 4 W eirp
- Type approval granted on the basis of local tests
- Language documents: English, only manual in Korean



# Republic of Korea



©EnchantedLearning.com

- Certification for family of products
- Costs US \$ 4500 per model family.

**NOTE:** If RF system: eg ESD acc. to KN 301 489 and if same unit connected via RS232, ESD repeated acc. to KN24

- TCF: Schematic, Antenna spec, BoM, Manual, Photo report internally/externally, application form
- No witnessing of testing, Install and explain systems
- Local applicant required
- Leadtime: 8 weeks
- Validity permanent

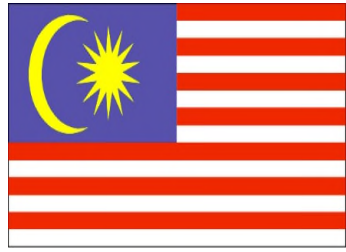
## Product labelling



상호명 : N.V.Nederlandsche Apparatenfabriek Nedap  
기자재의 명칭 (모델명) : I/O Motor Controller(VP3008)  
제조연월 : 2014년 월  
제조사 / 제조국가 : N.V.Nederlandsche Apparatenfabriek Nedap / Netherlands  
식별부호: MSIP-REM-Ned-VP3008



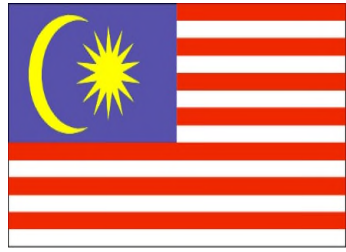
# Malaysia



- Approval body SKKM=Suruhanjaya Komunikasi dan Multimedia Malaysia or MCMC =Malaysian Communications and Multimedia Commission
- Agency Website : [www.skmm.gov.my](http://www.skmm.gov.my)
- Regulations: SKMM WTS SRD Rev. 1.01:2007
- Implementing body or Test Institute is SIRIM=Standards & Industrial Research Institute of Malaysia <http://www.sirim.my/>
- Frequency: 919-923 MHz, 2 Weirp
- No safety (only for ac/dc adapter), EMC or Human Exposure
- No local test mandatory, 2 samples needed
- No family approval



# Malaysia



- **Test report can be made by any accredited lab approx. US \$ 2500 in Europe**
- **Local applicant required**
- **Documents: Product data sheet, User manual, test report, trademark certificate**
- **Costs through consultancy in Malaysia RM 3,000 = US \$ 700, with testing RM 6,500 = US \$ 1,500**
- **Costs for second product with same electronics other name\_brand 2 x US \$ 700**
- **Lead time 4 weeks, if lab testing included 6 weeks**
- **Validity 1 year, renew formal letter and stating no revisions up to 5 year**
- **No special marking required only brand name and model number**



# New Zealand



- **Ministry: MBIE=Ministry of Business, Innovation and Employment Commerce, Consumers and Communication Branch**
- **Agency Website : <http://www.mbie.govt.nz/>**
- **Regulation: AS NZS 4268: 2012+A1:2103 Radio equipment and systems-Short range devices: Limits and methods of measurement**
  - Extract from *New Zealand Gazette*, 2/10/2014, No. 119, p. 3335
  - **Radiocommunications Regulations (General User Radio Licence for Short Range Devices) Notice 2014**
- **Frequency: 921.5-928.0 MHz: 4 Weirp or 921-928: 1 Weirp**
- **FCC (902-928 MHz) report not accepted, because outside the band 921-928 MHz**
- **Australian report according AS NZS 4268 accepted with a Declaration letter for NZ once exported to NZ system will be set to 921.5-928 MHz**



# New Zealand



- Frequency within the 920-926 MHz translated Chinese report is accepted only if referenced to a recognized standard like FCC 15.247 (not EN 302 208)
- No local testing, no samples needed
- New Zealand representative , BIE registered, is allowed to grant NZ approval
- Documents are delivered to consultant or representant in pdf
- In our case we use consultant fee is AU \$ 600 = US \$ 435 (For Au and NZ total)
- Lead time 1 week
- Marking “R-NZ”
- Validity permanent



# Republic of Philippines



- **Regulatory Body: Department of Transportation and Communications**
- **Approval body: NTC = National Telecommunications Commission,**
  - Radio Regulations and Licensing Department
- **Agency Website: [www.ntc.gov.ph/](http://www.ntc.gov.ph/)**
- **Regulation: MEMORANDUM CIRCULAR No.: 03-08-2006**
- **Frequency: 918-920 MHz, 2 Werp or 4 Weirp**
- **No local testing required, no samples needed, testing costs app. US \$ 2500 (Europe)**
- **No product family approval meaning every product even electronically the same needs to be applied for**
- **Human exposure assessment, EMC and Electrical safety**



# Republic of Philippines



- Test report EMC and electrical safety on “European” product acceptable
- Local applicant required
- Fees US \$ 1000 per application through consultancy
- Documents: Application form, relevant test reports, internal/external photographs, operational description, Instal Manual, application form FCC\_IC, Grants FCC\_IC, test reports FCC\_IC, Authorization letter (for rep. to be the contact), Declaration of product distribution, Marketing Declaration
- Lead time 20 weeks
- Validity is permanent



Product labelling



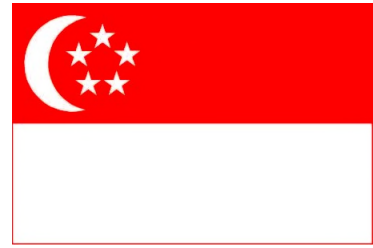
# Republic of Singapore



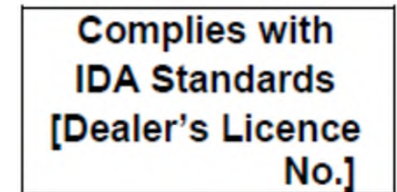
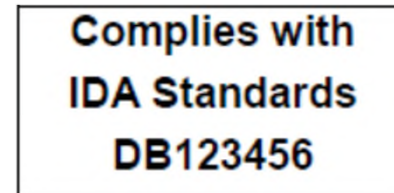
- Regulatory body: IDA = Infocomm Development Authority of Singapore
- Website: [www.ida.gov.sg](http://www.ida.gov.sg)
- Regulation IDA TS SRD = Technical Specification Short Range Devices. Reference to: FCC Part 15.247, EN 300 220, EN 302 208
- 866-869 MHz and 920-925 MHz 500 mW erp, 920-925 MHz 2 W erp
- No local testing, no samples
- No family approval possible
- EMC, Human Exposure assessment and Safety required
- Chinese reports translated into English accepted for the 920-925 MHz band, reports from accredited labs also reports for CE
- Local applicant required



# Republic of Singapore



- Fee power < 500 mW no fee, above 500 mW US \$ 250/model, end-user is required to apply for licence for the operation
- Documents: Application form, relevant test reports, internal/external/labelling photographs, Technical description, Instal Manual, Confirmation letter being manufacturer incl. Authorization letter for representative to be the contact, BoM, Blockdiagram, Product sheet and if available Grants FCC\_IC, test reports FCC\_IC
- Lead time 7 weeks
- Validation 5 years renewal US \$ 35



Product labelling

## NOTE:

2 W systems must undergo additional testing,

Under supervision and control of the IDA interference tests have to be performed with Singapore Telco's: M1, Singtel and Starhub, because in past UHF RFID systems

1. Have been set to the US frequency 902-928 MHz in Singapore
2. The frequency drifted away from the band 920-925 MHz into the GSM band.



# Thailand



- **Regulatory Body: NBTC=National Broadcasting and Telecommunications Commission**
- **Agency website: [www.nbtc.go.th](http://www.nbtc.go.th)**
- **Regulation NTC TS 1010-2550 Radio Frequency Identification: RFID Reference to: FCC Part 15.247, EN 300 220, EN 302 208.**
- **Frequency 920-925 MHz 500 mWeirp or 4 Weirp Class A equipment see NOTE**
- **No local testing, no sample**
  - **Local testing is possible but long queing time, costs THB 21,400 = US \$ 605, Taiwan tests US \$ 1,800**
  - **NOTE: Nedap performs local testing for Human Exposure with PTEC US \$ 400**
  - **Testing is conductive declaration about antenna Gain**
- **Family approval**



# Thailand



- Safety, Human Exposure Assessment and RF reports
- Chinese test report is acceptable only with accredited lab
- Local applicant required
- Fee is THB 1200 = US \$ 35
- Documents: Application form, relevant test reports, Brochure, Antenna gain declaration, operational description, Instal Manual, Confirmation letter being manufacturer incl. Authorization letter for representative to be the contact
- Lead time 2 months
- Validity permanent

**Note: Every piece of equipment transmitting more than 500 mW must undergo testing entering Thailand**



Product labelling



# Socialist Republic of Vietnam



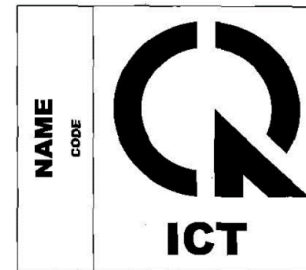
- Administration: MIC=Ministry of Information and Communications, [www.mic.gov.vn](http://www.mic.gov.vn)
- Regulator: VNTA=Vietnam Telecommunication Authority
- URL: [www.vnta.gov.vn](http://www.vnta.gov.vn)
- Regulation *Circular No. 20 dated May 03 03/2012/TT-BTTTT 2012 of the Ministry of Information and Communication*
- Frequency: No license 866-868 MHz and 920-925 MHz, 500 mWerp.  
On 866-868 MHz more than 500 mWerp though license for end user
- Local testing
- One sample needed



# Socialist Republic of Vietnam



- Family approval possible
- No safety, no EMC
- Local applicant required
- Approval Costs US \$ 2500
- Documents: Schematic, Theory of operation, Blockdiagram, data sheet, install Manual
- Lead time 1 month
- Validity 2 years, then retest



Product labelling

