RESUME
Emmanuel Roberto-Richiardone – 2023

Personal data

▸ Name: Emmanuel Roberto-Richiardone
▸ Birthdate: 26 April 1981
▸ Citizenship: Italy, France and Canada
▸ Home: Turin, Italy
▸ Phone: +39 340 25 39 585
▸ E-mail: `e@richiardone.eu`
              `emmanuel.roberto-richiardone@ingpec.eu`
▸ Language known:
              English – read/written very well, spoken good
              Italian - everyday language, very well
              French - mother-tongue, very well
              Spanish - base level (level A1 CEFR)
▸ Inscription to the italian Engineer Register:
              Engineer order of Province of Turin num. 11463X since 2009, Cuneo num. A02561
▸ Driving license:
              European license B since 1999, A since 2011
▸ Amateur radio license:
              HAREC level A CEPT TR 61-02, callsign IU1CUW

Education

▸ **2008** Qualification for italian national Engineer Register in ICT - Polytechnic of Turin
▸ **2004/2007** MSc in Computer Science Engineering specialization in Network Applications with a thesis on *'Software development for offline access to Wikipedia'* - Polytechnic of Turin
▸ **2000/2004** BSc Degree in Computer Science Engineering achieved with an essay untitled *'8051 Microcontroller'* - Polytechnic of Turin, Italy

Additional courses

▸ **up to 2021** Completed a lot of training about Professional and Commercial Radio, Dimetra Express, Dimetra IP Compact, Public Safety LTE and WAVE - Motorola Solutions Certification Program
▸ **2020** Quality and costs of (none) quality: evaluating company efficiency and tools for prevision - Ordine degli Ingegneri di Torino
▸ **2019** Videosurveillance and Privacy. Technologies, GDPR, TVCC - Ordine degli Ingegneri di Torino
▸ **2016** Training about microwave Integra solutions – SAF Tehnika (Riga)
▸ **2016** Indroductive course about home automation – Domotica Undici
▸ **2016** Training in configuring and managing the Hytera TETRA Accessnet solution
▸ **2015** Course in technical consulting in civil and criminal italian judiciary
▸ **2015** Setup, configuration and management of the Hytera DMR Tier III trunking solution
▸ **2015** Setup, configuration and management of the Sepura/Frequentis TETRA solution
▸ **2012** Spanish language, base level, with validity with the Common European Framework of Reference for Languages (CEFR) – INFOR

- ▸ **2009** ICT security course SEaCURE.it – SecureNetwork, Milano
- ▸ **2009** Structure and management of the Motorola Tetra systm Compact/Scalable Dimetra IP – Motorola, Berlin
- ▸ **2005** Internet and law iLaw 2005 - Fondazione Giovanni Agnelli, Torino Italy
- ▸ **1998** Astronomy and Astrophysics at Astronomic Observatory of Pino Torinese, Torino

Skills

- ▸ Meticulous and inventive, enjoys solving technical matters and finding simple solutions
- ▸ Deep knowledge of different levels and mechanism of voice and data networks, in the wireless mobile radio, PTP bridges and point to multipoint (TETRA, DMR tier II-III, licensed wireless bridges, IEEE 802.11, HiperLAN), in wired area (Ethernet CSMA/CA, E1), in TCP/IP suite protocols and routing on private/public networks, Radio over IP, multicast, VoIP
- ▸ Could easily design and manage geographical spread IP networks and backbone for PMR (Motorola Solutions, Hytera, Kenwood, Cisco, Cambium Networks, SAF Tehnika, SIAE Microelettronica, Rohill, Sepura, RadioActivity, Patton, BOSCH Telex, HP)
- ▸ Very good knowledge of RF telecom instruments on field and in laboratory, for example spectrum and network analyzer, oscilloscope, wattmeter, LAN tester for diagnostic of radiating systems, RF filters and cablings
- ▸ Good knowledge in development of appliance and embedded IoT based on GNU/Linux and FreeBSB
- ▸ Very focused in system and network security
- ▸ Deep knowledge about operating system FreeBSD, GNU/Linux and UNIXes; MS-Windows
- ▸ Knowledge of C, Python, shell scripting sh/bash/tcsh, HTML4/5, CSS, Javascript; bases of C++, Assembler, PHP, Java, PostgreSQL/MySQL/MSSQL

Work experiences

- ▸ Front end engineering design
  - New complex LNG plant for different telecom systems: Motorola Cap. MAX DMR Tier III 7 sites, TRBOnet PLUS software dispatchers and AVL, RoIP with Marine and Air/ground radio, microwave PTP link network design, PAGA, CCTV, data network design, VoIP network, telecom tower design

- ▸ TETRA networks
  - Design, technical pre-sales, configuration and deployment
    - Aeronautical industry over multiple plant using Dimetra Micro distributed over 6 sites, 170 subscribers, integrated using custom RoIP interfaces and Oelmann WiFi man down pagers, Motorola MCD5000 Deskset system
    - Utilities regional network, Dimetra, single site
  - Design and technical pre-sales
    - Large office building in Milan: Motorola Solutions Dimetra single site, integration with LoraWAN equipments
    - Railway tunnels using ATEX fiber optic repeaters and 9 Dimetra Express site
    - City subway using fiber optic repeaters and 2 Hytera DIB-R5 sites with data network and development of customized mobile subscribers
    - n.4 airports
    - Utilities regional network

- n.2 container ship port
- Configuration, deployment
  - n.3 Offshore oil&gas plant (Motorola Solutions, Hytera)
  - n.2 international tunnels (Motorola Solutions)
  - n.2 airports
  - Coal production site

▶ DMR networks
- Design, technical pre-sales, configuration and deployment
  - Park ranger communication network using MotoTRBO Link solution installed over 3 high altitude sites using off-grid photovoltaics powering system, 30 subscribers, integration with a NXDN network
  - Large pharmaceutical research plant using MotoTRBO Cap. PLUS and SmartPTT PLUS dispatchers, 60 subscribers, Bluetooth tracking using 400 beacons over 20 buildings and underground tunnels for man down application, telephone interface
  - Pharmaceutical production plant using MotoTRBO and SmartPTT dispatcher, Bluetooth tracking using 300 beacons for man down application, VPN tunnel for tablet interface, automatic CISCO Call Conference telephone interfacing, TWIG GSM man down interfacing
  - Waste to energy plant using MotoTRBO conventional radio and SmartPTT dispatchers, Bluetooth tracking using 300 beacons for man down application, telephone interfacing
- Design, configuration and deployment
  - City subway using 28 DMR Simulcast and 28 FM Simulcast sites using RadioActivity repeaters, 150 Kenwood subscribers, analog voice recoder integration, analog radio gateway link and bidirectional amplifiers to extent coverage
  - Fire brigade regional network using RadioActivity repeaters and SIAE Microelettronica links
  - n.6 geographical wide multi site radio networks for private security customers, up to 14 sites, using Motorola Solutions or RadioActivity repeaters. Among others, made integration to accomplish location tracking of mixed Motorola, Kenwood and Hytera subscribers
- Configuration and deployment
  - DMR Tier III reconfiguration, RadioActivity repeaters
  - Regional network for oil&gas, using RadioActivity conventional multi site network
  - n.2 Emergency regional network
  - High mountain cableway, conventional DMR
- Countless DMR tier II, tier III and Simulcast as design and technical pre-sales only

▶ Microwave PTP geographical networks or tunneled IP geographical networks
- Design, technical pre-sales
  - n.3 regional fire brigades networks
  - n.5 high mountain cableways
  - n.2 goverment and public security
  - n.2 private security networks
  - Big highway project
- Configuration, deployment
  - n.1 petroleum refinery

- ◦ n.2 fire brigades networks
- ◦ n.3 high mountain cableways
- ◦ n.2 goverment and public security
- ◦ n.2 private security networks

▸ Design, configuration and deployment of Radio over IP (RoIP) networks
- • n.3 fire brigade network
- • n.10 emergency dispatching solutions
- • n.5 national private security networks
- • n.10 regional private security networks

▸ Design, techinical pre-sales or deployment of CCTV solutions:
- • n.5 high mountain cableways
- • n.3 marine onshore and offshore
- • n.10 municipal survelliance

▸ Development of system and network custom solutions:
- • Created a secure VPN tunnel system for multi site radio repeaters application using redundant 4G connectivity and private cloud servers
- • Developed a LoraWAN Network Server and Application Server on premises as a standalone appliance device
- • Developed an appliance to show position of MotoTRBO and Kenwood DMR subscribers over an online or offline raster map using any web browser
- • Definition of a firmware implementation to achieve location tracking using Bluetooth beacon for Airbus TETRA subscribers
- • Developed RoIP gateways for DMR Motorola, DMR and NXDN Kenwood, TETRA Motorola to be integrated with different existing dispatchers
- • Many other radio related custom solutions, based on GNU/Linux and microcontrollers

▸ Telecomunication engineering consulting services
- • n.3 Highway radio coverage measurements and validation activities of installation by others (A12, A24 and A25)
- • Many site survey of buildings, industrial plants and telecom towers
- • Led conformity checks and validation tests for own customer or for installation by others
- • Conducted many training about DMR, TETRA and P25 networks for radio users
- • Countless VHF, UHF outdoor coverage simulations using Radiomobile, Signalpro
- • Countless microwave link planning studies using Linkplanner, SAF link tool, Pathloss

Employments

▸ Since **2020** Employment as "*Radio Solutions Architect and Proposal*" at Mobilcom – Paderno Dugnano MI
▸ **2016-2020** Employment as "*PMR & ICT Senior Engineer*" at Antares Elettronica – Bollate MI and "*Technical Director*" at Anthares ES – Bollate MI
▸ **2008-2016** Employment as "*ICT, Wireless & Network System Manager*" at BPG Radiocomunicazioni - Pinasca TO

- **2005-2015** Founding member of association *NetStudent,* that promotes and carries out courses about free software and Internet law - Turin
- **2006** Work done at E3C - Colleretto Giacosa TO
- **2005/2007** Part time at the Polytechnic of Turin for projects part of *open@polito* project
- **2005** Part time at the Polytechnic of Turin for teaching assistance in laboratories
- **2004/2005** Installation, setting and support of SCO OpenServer servers for AlfaLayer - Milan
- **2004** Work for GNU/Linux system engineering at AlfaLayer - Turin
- **2003** Services at Consorzio ACEA – Pinerolo TO

Hobbies

- Listen and collect hard rock/metal music
- Gardening
- Enjoys SLR photography