
Curriculum Vitae

Martinus Jacobus Coenen

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PERSONAL DATA

1.1 PERSONAL DETAILS

Name	Mart Coenen
Residence	Breda
Date of birth	March 7, 1956
Gender	Male
Nationality	Dutch
Languages	Dutch and English fluently, German verbally fluent
Education	BSc in Electrical Engineering, PhD in progress
Experience Since	1979 (1975)

1.2 PERSONAL PROFILE

I've supported a large number of customers, both OEMs as SMEs as private PI, SI, EMC as e-Hardware system integration consultant. Based on over 35 years of experiences, I've developed an efficient pragmatic approach on many system integration related issues, from IC design to container transportation automation. Over more than 30 years I've contributed to international EMC standardization processes. Aside my technical work, I've been also involved in pan-European projects; "JESSi, MEDEA, MEDEA+, Catrene, eNiac, FP7", member of the Dutch innovation initiative "Point-One" and the Dutch Holland High-Tech Platform organization and now ESCEL. Furthermore, I lecture at post academic courses: PAO (29 years), Fontys (part-time) and specific customers and supported university (PhD and MSc) and technical high school students (BSc) on their projects. I've published and contributed to several books on EMC aside the many papers that have been presented at international symposia and published in many magazines.

1.3 SUMMARY KNOWLEDGE AND EXPERIENCE

Subject	Type	Level
Applications	Design for compliance in Integrated Circuits	E(xpert)
	Design for compliance in Industrial Automation & Medical Products	E
	Design for compliance in Automotive Products	E
	Design for compliance in Telecom Products; wired and wireless	E
	Design for compliance in Consumer Products	E
Technologies	Design for Robustness and compliance	E
	Electrical Safety; FCC, UL, CSA	E
	Measurement techniques	E
Disciplines	Technical writer; international and national magazines, pan-European projects and international standardization	E
	International Standardization and European Project collaboration	E
	Teacher with PAO	E
	Quality Engineer and auditor	E
	Statistics in Experiments	P(racticing)
	MathCad/ MATLAB	E

1.4 EDUCATION

Period	Course	Institute
1968 – 1975	HAVO	Roncalli Scholengemeenschap (Dalton system), Bergen op Zoom
1975 – 1979	BSc in Electrical Engineering	Institute of Electrotechnics (HTS-E) Breda, Netherlands
1981 – 1982	(Post HBO course) Antenna theory	Fontys Institute; Eindhoven, Netherlands
1985 – 1986	Propadeus in mathematics	Technical University of Eindhoven
1987 – 1988	Quality engineer KDI	Fontys Institute; Eindhoven, Netherlands
1979 – 1999	Various Philips Internal Trainings	Eindhoven, Netherlands
1996 – 1996	Basic Grade Book keeping	Dutch Association of Practical Exams, Amersfoort, Netherlands
2000 –	Industrial marketing	LOI, (unfinished)
2000 – 2000	Design of Experiments	PS IS Nijmegen
2001 – 2001	Design of Experiments	CQM, Eindhoven
2010	MatLab, basics	MathWorks, Eindhoven
2010	MatLab, design techniques	MathWorks, Eindhoven

1.5 SUMMARY OF WORK EXPERIENCES

	Function
2010 – now	MCC-Beheer bv, Eindhoven (private) <i>Director/ manager</i>
2010 – now	EMCMCC, Eindhoven (private) <i>Director/ manager</i>
1998 – 2010	EMC MCC bv, Eindhoven (private) <i>Director/ manager</i>
2013 – now	Fontys Mechatronics department, Part-time lecturer in electronics, sensors and EMC
2008 – 2013	ASML, System integration (as hired consultant) At various positions within Electronics development (E-Dev)
2008 – 2010	TMC Electronics Technical advisor to the Industrial Automation and Electronics cell
2007 – 2008	TMC Industrial Automation Technical Manager and expert consultant System Integration
2005 – 2007	Philips Applied Technologies, EMC center Customer Relation Manager & R&D manager
2004 – 2005	Philips Digital Systems Labs Eindhoven, EM&C Customer Relation Manager & R&D manager
2003 – 2004	Philips Digital Systems Labs Eindhoven, EMC³ R&D manager IC section
1988 – 2003	Philips Semiconductors, Systems Labs Eindhoven <i>Cluster Manager EMC</i>
1994 – 1998	EMC MCC, Eindhoven (private) Owner/ manager
1985 – 1988	Philips Industrial Electronics, Corporate Quality Department <i>International Quality Manager EMC and Product Safety</i>
1979 – 1985	Philips Research Labs Eindhoven, EMC Department <i>EMC Engineer, Research assistant</i>
1975 – 1979	Rein de Jong Electronics, Bergen op Zoom, <i>Sales and service engineer</i>

1.6 DETAILED DESCRIPTION

	Function
2010 – now	MCC-Beheer bv, Eindhoven (private) Financial holding for EMCMCC
2010 – now	EMCMCC, Eindhoven (private) <i>Director/ manager</i> <ul style="list-style-type: none"> • EMC consultancy and design-in support for electronic products and systems in various industrial application areas with a wide range of customers: • ASML, Neways, Bosch-Rexroth, Melexis, ZMD, BTG; various topics. • Member of national and international EMC standardization: SEMI E33, IEC 77B/WG, NEC EMC, NEC TC47, NEC ISO TC22, IEC TC47A/WG9 and member of IEC TC47A/WG2
1998 – 2010	EMC MCC bv, Eindhoven (private) <i>Director/ manager</i> <ul style="list-style-type: none"> • EMC consultancy and design-in support for electronic products and systems in various industrial application areas with a wide range of customers: • ASML, Neways, Bosch-Rexroth, NXP, ST-Wireless, SiTel, BTG (ECT), Siemens; power converters, Demag; container transport automation, ECCT; telecom products (first compliant 2-layer DECT application), Dima SMT bv, Hoyte, R&D; various topics, etc. • Member of national and international EMC standardization: IEC TC47A/WG9 and member of IEC TC47A/WG2 • Author of the updated book on ElectroMagnetic Compatibility • Author of various papers for international EMC conferences • Sponsor of Fontys Technical High school projects to develop students • External expert in the exam committee at the Fontys Technical High school
2013 – now	Fontys University of Applied Science , Mechatronics department. Part-time lecturer in electronics and electromagnetic compatibility for all grade students 1 st till 7 th semester
2007 – 2013	ASML Member of E-Dev. Involvement with system architecture, in particular EUV and 450 mm as well as w/h improvements on existing platforms. Main focus on system design and system integration
2008 – 2010	TMC Electronics Technical Advisor of the board
2008 – 2008	TMC Technical Automation <i>Technical Manager and expert consultant</i> <ul style="list-style-type: none"> • Involvement in business development • expert consultant
2005 – 2007	Philips Applied Technologies, EMC center <i>Customer Relation Manager & R&D manager</i> <ul style="list-style-type: none"> • Member management team to 30 persons • Project acquisition with NXP, Philips Lighting and PMS for over 2 Mio • Member program team MEDEA+ Parachute + Work Package leader • Member MEDEA+ Experts group • Technical involvement in NXP BU Home projects: one-chip TV and “single engine” w.r.t. problem solving, cost reduction actions and feasibility and offering design solutions. • Co-author “EMC in ICs” Springer Verlag • Convener of workgroups in international standardization: IEC TC47A/WG9 and member of IEC TC47A/WG2 • Owner of an IEC 1906 Standardization Award

2004 – 2005	<p>Philips Digital Systems Labs Eindhoven, EM&C <i>Customer Relation Manager & R&D manager</i></p> <ul style="list-style-type: none"> • Department head of sub-group being responsible for EMC in IC design, design-flow, IC measurements, consultancy support • Responsible for acquisition and external relations • Owner of 4 patents about IC package modeling (2), off-chip IC supply and adiabatic CMOS logic (triple-well). • Awarded super lecturer of PATO-EMC (>20 years of contributions) • Convener of workgroups in international standardization; IEC TC77B/WG9 and IEC TC47A/WG9 and member of IEC TC77B/WG11, IEC TC47A/WG2, ISO TC22 (Automotive) and NEC
1988 – 2003	<p>Philips Semiconductors, Systems Labs Eindhoven <i>Cluster Manager EMC,</i></p> <ul style="list-style-type: none"> • Department head of group which grow from 1 to 8 persons • Responsible for EMC in PS-wide IC design, design-flow, measurements, consultancy • Development of training courses with Philips CTT: “High speed design”, “Introduction in IC design”, “X-tal Oscillator design” and “EMC for IC designers” • First leader of the Philips taskforce; resulted in new design rules from C150 down to CMOS090 • Owner and co-author of 3 EMC related patents 2001 • Work package leader in MEDEA+ Mesdie A509, WP4 Test vehicles • Convener of workgroups in international standardization; IEC TC77B/WG9 (revision IEC 61000-4-2) and IEC TC47A/WG9; responsible for IEC 61967-x, IEC 62132-x and IEC 62215-2 • First chairman of the Dutch EMC/ ESD Society (founded 1994, 260 members)
1994 – 1998	<p>EMC MCC, Eindhoven (private) <i>Owner/ manager</i></p> <ul style="list-style-type: none"> • EMC consultancy and design-in support for electronic products and systems in various industrial application areas with a wide range of customers: • BTG (ECT); container transport automation, ASML (twinscan), Ascom; parking and traffic systems, ECCT, Datelnet, Dima; pick and place machines, Difa; fast data logging systems, Fisher Rosemount; process equipment, On-stream; data recorders, Argus; heating control, Neways R&D, Halin, etc.
1985 – 1988	<p>Philips Industrial Electronics, Corporate Quality Department <i>International Quality Manager EMC and Product Safety,</i></p> <ul style="list-style-type: none"> • Responsible for PD IE EMC and Product safety related policy and issues in design, application, installations • Project leader for the videotape “EMC, good business sense” in the collaboration with Research and most Philips PDs and the Philips Board of Management: Martin Kuilman. • Service with external customers, MAHO, Daimler, Boeringer • Contact to certifying institutes; TUV, CSA, UL • Convener of workgroups in international standardization; IEC TC65A/WG4, responsible for IEC 61000-4-6 (former IEC 801-6)
1979 – 1985	<p>Philips Research Labs Eindhoven, EMC Department <i>EMC Engineer,</i></p> <ul style="list-style-type: none"> • Responsible for the creation of the EMC test facilities • Responsible for research and problem solving projects • Co-author and lecturer at the CTT EMC basic training course • Technical contributor to the book “<i>Electromagnetic Compatibility</i>” (J.J.Goedbloed) • Co-author and lecturer to the PATO EMC course
1975 – 1979	<p>Rein de Jong Electronics, Bergen op Zoom, <i>Sales and service engineer</i></p> <ul style="list-style-type: none"> • Locally responsible for servicing audio and video apparatus

Further experiences:

- Past member of the Philips workers-councils:
 - Philips International – Industrial Electronics (2,5 year's period, until leaving in 1988)
 - PD-Components (3+ year's period)
 - Philips Semiconductors, started November 2001, until leaving January 2003.
- In collaboration with Universities and Technical High Schools (Fontys Eindhoven, Venlo, 's-Hertogenbosch, Utrecht, Amsterdam, Leuven) more than 25 students have been supported with their MSc, BSc and PhD projects over the years.
- Member of the editing committee of Kluwer's electrotechnical magazine "Elektronica" and "EMC/ESD Praktijk"
- Many contributions to the Dutch EMC/ESD Society magazine; EMC/ESD Praktijk e.g. "EMC basis eigenschappen" part 1 to 67 have been published.
- Member of the organization and technical paper committee (TPC) of EMC Zurich (every odd two years) also past session chairman 1993/1995
- Member of the local organization and technical paper committee (TPC) of EMC Europe 2000, Eindhoven 2004
- Session chairman EMC Europe Workshop 2007, Paris, session chairman of APEMC2010, Beijing, APEMC2012, Singapore.
- Member of the organizing committee of EMC Compo 2002 - 2011
- Reviewer for IEEE transactions on EMC
- Reviewer for EMC Europe
- Reviewer for EMCCompo
- Reviewer for APEMC
- Company restricted related publications and reports have not been listed.
- Continuing to complete my PhD thesis at the University of Technology Eindhoven (TUE).

Recent external publications:

2004	<ul style="list-style-type: none">- <i>EMC Standardization for Integrated Circuits</i>, Mart Coenen, DATE 2004 Paris- <i>Workshop EMC Modeling of Semiconductor Devices</i>, IEEE EMC Symposium, Sendai, Japan- <i>Workshop EMC Modeling of ICs</i>, EMC Europe 2004 Symposium, Eindhoven, the Netherlands- Member Project team MEDEA+, Parachute; responsible for 51 my of allocated work for Philips- Patent holder of "adiabatic CMOS logic"- Working on my promotion thesis; "EMC in nanometer" at the TUE (planned for completion 2008)- Contributions on a book: <i>EMC in ICs</i> (to be published by Springer Verlag), written together with various International Institutes
2005	<ul style="list-style-type: none">- <i>Workshop EMC Modeling of ICs</i>, EMC Symposium, Zurich, Switzerland.- <i>Charge recovery in CMOS</i>, Less-power symposium, PS/PRLE- <i>Analog & Mixed Signal Design, Bridging the Gap?</i> Mixed-signal design symposium, PRLE- New (triple-well) processes under development (CMOS12 downwards) shown great opportunities for solutions with respect to signal integrity (SI), power integrity (PI) and electromagnetic compatibility (EMC), PS WWTC- <i>Optimization techniques for minimizing IR-drop and supply bounce</i>, EMCCompo 2005- <i>Standardization for EMC IC Modeling</i>, EMC Compo 2005- MEDEA+ Design Automation Roadmap 2008-2014, Ch 8 and contributions for alignment to other roadmaps; IP, (I/O) libraries, MEMS and sensors- <i>Business Orientation EMC in ICs, 2005-2008</i>
2006	<ul style="list-style-type: none">- Development of pre-layout IR-drop estimator tool- NP IEC 62433 EMC IC modeling framework

2007	<ul style="list-style-type: none"> - <i>Solution to physical measurement uncertainty in simple conducted RF emission measurements using modified AMNs</i>, ITEM, April 2007 - <i>EMC in large system installations</i>, EMC Europe Workshop, Paris - Acceptance of IEC 62215-2 TS; <i>Synchronous Transient Impulse (STI) Immunity test method</i> - Member International Committee EMC IC Roadmap, ITRS - Chairman organizing committee PACE 2007, EMC workshop - Draft PO proposal Na2Mo for CATRENE; 2009 - 2012 - Paper EMC Compo2007; <i>Pre-layout IR-drop estimator</i> - Patent proposal submissions: <ul style="list-style-type: none"> - <i>Dynamic supply bounce and RF emission reduction by activity spreading</i> - <i>Jitter minimization with DLL designs to assure timing constraints</i> - <i>On-chip supply bounce versus off-chip current optimization</i> - <i>Discrete spread-spectrum sampling (DSSS) for over-sampling A/D (+ S/H), D/A and class-D amplifiers to reduce RF emission and eliminate bead frequency issues</i>
2008	<ul style="list-style-type: none"> - Member TPC EMC Zurich in Singapore 2008 - CD IEC 62433-1 <i>EMC IC modelling framework</i> - <i>Cutting the crap with conventional off-chip IC decoupling measures</i>, ITEM April 2008 - Contribution to IEEE Transactions on Electromagnetic Compatibility, <i>The Electromagnetic Compatibility of Integrated Circuits - Past, Present and Future</i>
2009	<ul style="list-style-type: none"> - Expert CATRENE; pan-European high-tech collaboration, responsible for chapter 8 in the CATRENE Application Roadmap 2010-2014 - Business case owner (power & energy) with Point-One: Dutch innovation initiative - <i>The Electromagnetic Compatibility of Integrated Circuits - Past, Present and Future</i>, Mohamed Ramdani, Senior Member, IEEE, Etienne Sicard, Senior Member, IEEE, Alexandre Boyer, Sonia Ben Dhia, Member, IEEE, James J. Whalen, Todd Hubing, Fellow, IEEE, Mart Coenen, Osami Wada IEEE EMC transactions - <i>RF emission reduction techniques for ARM-based microcontroller applications</i>, ITEM 2009, EMC Directory & Design guide - <i>de systeem-integratie "bijsluiter"</i>, contributions to (Dutch) bits & chips symposium - contributions to EMC Compo 2009 (Toulouse, France) - submission of new in-site test method to IEC and SEMI standardization using "<i>surface current sense wires</i>" - 25 years lecturer at a post academic (POA, formerly PATO) course on EMC
2010	<ul style="list-style-type: none"> - Contributions to APEMC 2010 (Beijing, China) on: <ul style="list-style-type: none"> - <i>Discrete spread spectrum sampling</i> - <i>Surface current sense wires</i> - <i>Noise Reduction in Nanometre CMOS</i> - Session chairman at APEMC - Member of the Industrial Forum at APEMC - Business case owner with Point-One for "<i>energy and power</i>" and "<i>sensors and actuators</i>" - Lecturer EMC with motion drive technology and sensor at Mikrocentrum - Member of the advisory board of the High Tech Platform - <i>In-situ EMC testing using surface current sense wires</i>, ITEM 2010, EMC Directory & Design guide 2010 - <i>A change in International EMC legislation?</i> ITEM 2010, EMC Directory & Design guide - Patent on "<i>Multi-layer PCA supply decoupling optimization without resonances</i>" (private)
2011	<p>International projects: EM4EM (Catrene), rejected by AgentschapNL EM-CIRF (FP7) pending</p>

	<p>Papers and publications: Mart Coenen, <i>IC, IC-package to PCB co-design</i>, EMCCompo2011 Mart Coenen, Arthur van Roermund, <i>Resonant-Free PDN Design®</i>, EMCCompo2011 Mart Coenen, Hugo Pues, Thierry Bousquet, <i>Automotive RF immunity test set-up analysis, Why test results can't compare ...</i>, EMCCompo2011 Mart Coenen, Hugo Pues, Thierry Bousquet, <i>Automotive RF Immunity Test Set-up Analysis: Why Test Results Can't Compare</i>, Interference Technology EMC (ITEM), Test & design guide 2011</p> <p>New patents:</p> <ul style="list-style-type: none"> • <i>HV interconnect in vacuum</i> • <i>4-wire common-mode choke</i> • <i>DPP EUV source enhancements, series termination</i> • <i>DPP EUV Source enhancements, TLP excitation to enhance efficiency</i>
2012	<p>International projects: <i>EM4EM</i> (Catrene), rejected by AgentschapNL (Dutch Dept. Of economic affairs), (project is already running in Europe) <i>EM-CIRF</i> (FP7) rejected by AgentschapNL due to Lack of funds</p> <p>International standardization: Sense wire measurement methods submission to IEC TC77B; 671e_NP and SEMI E33. Complementary emission proposal is in progress</p> <p>Member of the ESDA Industrial council</p> <p>Papers and publications: EMV (Düsseldorf, Germany), Feb, 2012</p> <ul style="list-style-type: none"> • <i>EMC in Industrial Electronics; an Integral Design Approach</i> • <i>Surface Current Sense Wire</i> • <i>High-end IC decoupling strategies; Complementary EMC measures, from IC design to PCB</i> <p>ESDA-EWI (Turnhout, Belgium), May 2012, workshop speaker</p> <ul style="list-style-type: none"> • <i>Bridging the gap between IC design and its application</i> <p>APEMC2012 (Singapore), May 2012:</p> <ul style="list-style-type: none"> • <i>Time-Domain Surface Scan Method</i> • <i>Assembled PCB EMC test methods</i> • <i>Reducing Compliance Uncertainty with AMN Measurements</i> <p>DSPE (Deurne, Netherlands), Sept 2012</p> <ul style="list-style-type: none"> • <i>Extend your PI, SI and EMC requirements to enable profound modular Mechatronic designs</i> <p>Publication in ITEM, Nov 2012 Publication in Mikroniek, Sept 2012</p>
2013	<p><i>'Live' Mains Impedance Measurement and Analysis</i>, EMC Europe 2013, Bruges, Mart Coenen, EMCMCC, Arthur van Roermund, Eindhoven University of Technology Mixed-signal Microelectronics Eindhoven, the Netherlands</p> <p>White paper SEMI E33: <i>In-situ EMC measurements of large installations in compact environments.</i></p> <p>Standardization submission to IEC TC62A: <i>RF immunity for wired and wireless EEG and ECG equipment</i></p> <p>Standardization submission to IEC TC77A: <i>LF immunity on single and 3-phase mains systems in the frequency range 2 – 150 kHz</i></p>

2014	<p><i>Lichtnet(ver)storing en/of impedantie-verstoring?</i> Mart Coenen, Elektronica 10, 2014</p> <p><i>Conducted mains test method in 2–150 kHz band</i>, Mart Coenen EMC MCC, Arthur van Roermund Eindhoven University of Technology Mixed-signal Microelectronics Eindhoven, the Netherlands, EMC Europe 2014, Göteborg, Sweden</p> <p><i>Seeding and harvesting</i>, Mart Coenen, Interference Technology, 12/05/2014</p> <p><i>Zaaien en oogsten</i>, Mart Coenen, Interference Technology, 2015-europe-guide/3</p> <p>System Integration and Mechatronics, Tom Gierstberg, Mart Coenen, EMC MCC, DSPE 2014</p> <p><i>Electrical Safety, ESD and EMC</i>, Seminar Mikrocentrum</p> <p><i>Slim Thermisch en EMC-Compliant ontwerpen</i>, Norbert Engelberts</p> <p>Optimal Thermal Solutions BV, Mart Coenen EMC MCC, Sept 2014</p>
2015	<p><i>Solution to enhance reproducibility with radiated RF emission and immunity measurements?</i> Mart Coenen, EMC MCC, Interference Technology, 2015</p> <p><i>LF H-field immunity surface scan method</i>, Mart Coenen EMC MCC, Bharat Kathari, IBI Group, India, EMC Europe 2015, Dresden</p> <p><i>Dynamic Response Model for SEED Analysis, Part 1</i>, Mart Coenen EMC MCC, Ming Ye, Huichun Yu, Huawei Technologies Sweden AB, Huawei Technologies Ltd, China, EMC Compo 2015, Edinburg</p>