






PERSONAL INFORMATION

CARMINE ZAPPACOSTA



 Italcertifer S.p.A.
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 www.italcertifer.it

Sex M | Date of birth 03/07/1978 | Nationality Italian

WORK EXPERIENCE

16 September 2016 – Present
Employer

Chief Executive Officer and General Manager

ITALCERTIFER S.p.A. – Ferrovie dello Stato Italiane Group – Shareholders Polytechnic University of Milan, University of Florence, University of Naples Federico II, University of Pisa, Tuscany Governorate
Piazza della Stazione, 45 - 50123 – Florence

Main activities and responsibilities

CEO and General Manager of Italcertifer S.p.A. - company born in 2001 belonging to the Italian State Railways Group (FS Group), operating as Notified Body (NoBo) for the conformity assessment of railway subsystems and interoperability components, both in the high-speed railway sector and in the conventional railway network according to the Directive 2008/57/EC and 2009/131/EC on the interoperability of the rail system within the Community, as Independent Safety Assessor (Designed Body) acknowledged by the Italian Rail Safety National Agency (ANSF) for the certification of the national railway system according to Italian regulations, as "Inspection Body UNI CEI EN ISO/IEC 17020 type A" accredited by Accredia for design verification aimed to validation of public works' design, as an accredited laboratory for the tests necessary for the certification of the aspects safety-related and of TSI-compliance of the rolling stock and as an ISO / IEC 17021-1 accredited Systems Certification Body for the certification of company assets in accordance with the ISO 55001 standard - undertakes the company transformation strategy enabling Italcertifer to achieve the leadership in Railway and Metro certification and testing field, for turnover and customer portfolio growth, both in Italy and in the world.

During his tenure the Company has set up a new business growth strategy which has resulted in an average annual growth in revenues of more than 8%, with a turnover approaching 18 Mln EUR and an Ebitda Margin that reached approximately 15%.

The company also works consistently abroad with positive results, such as activities in the following countries: India, Greece, Turkey, Saudi Arabia, Australia, Poland, Bulgaria.

Italcertifer's business has increasingly moved to customers not belonging to the FS Group (about 70% of revenues come from customers outside FS and about 30% from foreign activities), strengthening its position according to market logics, as confirmed by the business portfolio that includes around 150 customers in Italy and over 50 abroad.

In order to internalize and strengthen the know-how and to accept the new challenges related to the development and technological innovation of safety systems in infrastructure and transport fields, both in Europe and in the world, thanks to the strategic vision of the CEO, in the last two years Italcertifer's human resources size has doubled, going from 70 units at 12/31/2016 to the current 154.

Major Italian Projects

- EC Certification and tests of conventional and high-speed vehicles with respective records achieved (ETR 1000, regional trains of different manufacturers such as Hitachi, PESA, Stadler, Newag, CAF, Siemens, Freccia Rossa fast etc.) both as CEO and, previously, as assessor;
- EC Certification both for the infrastructural and energy components, and for the technological components of signaling (CCS-T) of the main Italian railway lines and stations (HS Treviglio-

Brescia, HS Turin-Padua, Afragola Station, stretches of conventional and regional lines across Italy, etc.);

- Activity of Design Verification (or Independent Checking Engineer) aimed to validation of public works' design according to art. 26 of the Italian public contract code of the Brenner Base Tunnel (BBT) and design verification of road and infrastructure sections for ANAS S.p.A.;
- Certification of the Management System of tangible assets of RFI S.p.A. in accordance with the ISO 55001 standard.

Major Projects Abroad

- Independent Checking Engineer (ICE) of Metro Riyadh Line 3 (value of the works approximately 6 billion – Saudi Arabia);
- Independent Safety Assessment (ISA) of the Control-Command and Signalling system of the first Driverless freight line – Australia;
- Independent Safety Assessment (ISA): Interlocking Train Collision Avoidance System and Dedicated Freight Corridor (East and West) – India
- Third-Party Quality Assessment activity of Metro Navi-Mumbai – India;
- Independent Safety Assessment (ISA) of the Mecca-Medina High Speed Line, both for Infrastructure and Rolling Stock – Arabia Saudita;
- EC Certification of the Line Tithorea-Domokos – Grecia;
- EC Certification of the TRAXX MS3 Bombardier locomotive for commercial operation in Countries other than Italy;
- EC Certification of ETR 1000 for commercial service in France;
- Independent Safety Assessment (ISA) of the Control-Command and Signalling system of the Taipei Metro Circular Line – Taiwan;
- Independent Safety Assessment (ISA) of Railway Products: Level Crossing - Obstacle Detection system – Japan;
- Independent Competent Person (ICP) for the Operation & Maintenance phase of four Metro lines in Riyadh - Lines 3, 4, 5 & 6 – Saudi Arabia;
- Certification and Assessment of the Asset Management System (AMS) according to the ISO 55001: 2014 standard relating to the "Operator and Maintainer" of the Riyadh Metro – Saudi Arabia;
- Independent Safety Assessment Etihad Rail Project Stage 2 Package A for the Track Works, Civil Works and Permanent-way disciplines in accordance with CENELEC standards for safety – United Arab Emirates;
- Assessment according to TSIs of the Ankara-Konya high-speed line for all subsystems – Turkey.

Railway / civil / industrial sector

February 2012 – September 2016

Head of Testing Authority and CSM Departments (Common Safety Method), from 04/08/2015. CSM Assessor – (Independent Safety Assessment) for rolling stock certification – On Board Safety Testing Head – Senior Assessor

Employer

ITALCERTIFER S.p.A.

Largo F.lli Alinari, 4 - 50123 - Florence

Main activities and responsibilities

- Safety testing authority during running-tests of rolling stock, Electromagnetic compatibility expert, Electrical equipment rolling stock expert, CSM assessor supervisor, Safety Testing Leader in certification process of rolling stock;
- Relations with Institutions and Universities;
- Attendance at tests on rolling stock (doors, vehicle lateralization, electrical equipment, etc.);
- Scientific advisor in the project SIMPLE (railway safety in automatic level crossings "LivEllo" (founded by Tuscany governorate within POR CREO FESR 2007-2013);
- Supervisor and Safety testing authority Leader during running-tests of rolling stock in Conventional and High Speed networks (i.e. certification process V300 Zefiro ETR 1000 running-tests with speed up to 390 km/h).

Railway / civil / industrial sector

January 2008 – January 2012

Research Fellow for the activity of research titled "Methods and measurement for sensorless characterization of magnetic materials and power quality measurement in photovoltaic installations"

Employer

Department of Electric Systems and Automation (DSEA) of Engineering Unit of University of Pisa (today Department of Energy and Systems - DESE) – Largo Lucio Lazzarino - 56122 Pisa (PI)

Main activities and responsibilities

- Analysis and measurement of radiated emissions and conducted within electromagnetic compatibility tests in different fields, including transport field, but mainly in the railway sector;
- Measures of radiation shielding efficiency;
- Power measurement on behalf of third parties;
- Measurement and electrical equipment on rolling stock in the railway sector;
- Participation in different projects for developing devices based on hydrogen technologies and PV systems;
- Participation in a project aimed at converting a ship intended to carry goods and people into an innovative laboratory-boat for power quality measurement, where the energy production plants were non-traditional ones, such as photovoltaic and fuel cells;
- Participation in measurement recording for the acoustic characterization of an innovative industrial system for the treatment of polluted soils.

Education and Research

2009 – 2011 **Research contribution to the project “H2 Hydrogen Chain” funded by the Tuscany Governorate and led by the University of Pisa and the Sant’Anna School of Higher Studies Pisa**

Employer Department of Electric Systems and Automation (DSEA) of Engineering Unit of University of Pisa (today Department of Energy and Systems - DESE) – Largo Lucio Lazzarino - 56122 Pisa (PI)

Main activities and responsibilities

Design and assembly of a new hydrogen on-board auxiliary system (hydrogen storage in metal hydrides equipments and power generation with fuel cells) for pleasure-boats.

Ministerial and Regional Project of Research

June 2004 – December 2004 **Stage for research internship**

Employer Enel Ricerca – Via Andrea Pisano - Pisa (PI)

Main activities and responsibilities

Preliminary design of a cogeneration system based on a new hydrogen-fed gas turbine with steam injection.

Energy

Education and training

January 2005 – 2009 **Ph.D in “Energy, Electric and Thermal Engineering”, major in “Electromagnetic Systems and Device with dissertation titled “Analysis and characterization of soft magnetic materials”**

Engineering Department of University of Pisa

30 April 2004 **Master’s Degree in Electric Engineering** achieved at University of Pisa on 30th of April 2004 with a score of 110/110 Pisa with a thesis about “A Dynamic Model of a Steam Reformer Model – Fuel Cells” carried out at Enel Research Pisa.

Engineering Department of University of Pisa

1997 **High School Diploma** with a score of 52/60

High School Mario Pagano in Campobasso

Courses for training and other achievements

December 2018 - present **Member of the Steering Committee of FS Academy (high training course including laboratories and company internships) - Naples**

September 2016 - present **Participation in several managerial courses and on legal, economic and financial topics**

2014 **Participation and passing the exam of the course "Risk Analysis in Railway Sector"**

1-3 April 2014, 15-17 April 2014, 6-9 May 2014
Asstra - Rome

2010 **Participation in the High Education Program on Energy**

22-23 e 29-30 October 2010, 5-6, 12-13 e 19-20 November 2010
Toscana Energia, University campus of Pistoia

2007-2009 **Participation in the three years' "Seminar of Excellence Italo Gorini" – PhD School**

- "Seminar of Excellence Italo Gorini– Methodologies and measurement devices in various industrial fields, from quality to metrology", 31st of August - 4 September 2009, PhD School "Italo Gorini", Perugia;
- "Seminar of Excellence Italo Gorini – Methodologies and measurement devices in various industrial fields, of services, of quality", 1-5 September 2008, PhD School "Italo Gorini", Gaeta-Minturno;
- "Seminar of Excellence Italo Gorini – Methodologies and measurement devices in various industrial fields, of services, of quality", 10-14 September 2007, PhD School "Italo Gorini", Anacapri.

2006-2011 **Honorary Fellow in "Electrotechnics", "Steady electromagnetism", "Industrial electromagnetic compatibility", "Electrical measurements" e "Electrical equipments"**

Engineering Department of University of Pisa

2005 **Participation at the "XXI Theoretical and Practical Course in Measurements and Magnetic Materials"**

19-22 April 2005
Istituto Elettrotecnico Nazionale "Galileo Ferraris", Turin

FURTHER INFORMATION

Teaching experience

2005 – 2011 **Teaching activities**

Engineering Department of University of Pisa – Largo Lucio Lazzarino - 56122 Pisa (PI)

- Support to teaching and member of the examination committee in the courses of Electrotechnics, Industrial Electromagnetic Compatibility, Electric Measures and Electric Equipments;
- Tutoring activity for various degree level thesis.

Research activity

2005 – 2011 **Main topics**

Units of Research of several Universities, Italian and foreign (such as the University of Perugia, the "Universidad Carlos III" of Madrid, the "Univesidad Pontificia Comillas" of Madrid, the "Center for Nonlinear Science" of the "University of North Texas"), research centers (i.e.: ENEA) and with industrial partners (i.e.: Prysmian Cable & Systems, Enel Ricerca, etc.)

- The main research activities can be summarized as follows:
 - industrial electromagnetic compatibility ;
 - experimental analysis and measurement of time-varying and space-varying electromagnetic fields in continuous nonlinear media;
 - characterization of magnetic materials and modeling of vectorial and scalar hysteresis;
 - characterization and modeling of nonlinear shields;
 - experimental analysis and measurement of fast electromagnetic transients and electric shock;
 - studies on discharge in catenary/pantograph coupling;
 - methods, measurements and instrumentation in electrical equipment of rolling stock of the railway sector ;
 - study and measurement of power quality in distributed generation systems (fuel cells, photovoltaic, etc.);
 - current transducers and voltage (i.e. Rogowski coil);
 - lithium batteries for vehicles and boats.

Scientific publications

1. R. Ascenzi, L. Caccamo, G. Mancini, P. Sereno, S. Vetrucchio, **C. Zappacosta**, “*Integration of TDD (Test Driven Development) and CI (Continuous Integration) techniques in ISO/IEC 17025 accredited laboratories*”, accepted for presentation at WCRR World Congress on Railway Research, 28 October – 1 November 2019, Tokyo.
2. **C. Zappacosta**, G. Mancini, S. Vetrucchio, L. Caccamo, L. Bocciolini, “*A railway simulator to reproduce train dynamics and European signaling environment*”, accepted for presentation at WCRR World Congress on Railway Research, 28 October – 1 November 2019, Tokyo.
3. L. Foconi, M. Finocchi, G. Mancini, **C. Zappacosta**, “*Research for improving standardization of fire-fighting systems for railway vehicles*”, accepted for presentation at WCRR World Congress on Railway Research, 28 October – 1 November 2019, Tokyo.
4. M. S. Spinelli, **C. Zappacosta**, L. D’Amelio, A. Lo Burgio, “*A new project finance solution for railway lines and consequently risk analysis for public and private investors Authors*”, accepted for presentation at WCRR World Congress on Railway Research, 28 October – 1 November 2019, Tokyo.
5. D. Genovese, **C. Zappacosta**, G. Mancini, G. Pancari, A. Papeschi, L. Foconi, “*Running Capability Assessment for Rolling Stock According to EU Regulations*” proceedings AEIT International Conference, 18-20 September 2019, Florence.
6. **C. Zappacosta**, L. Bocciolini, F. Piccioli, M. Macherelli, N. Vanni, “*Overview of measurement chain and instrumentation setup for running dynamics on-track tests – normal method – according to EN-14363 standard*”, proceedings AEIT International Conference, 18-20 September 2019, Florence.
7. L. Beccastrini, L. Chiacchiari, **C. Zappacosta**, “*Economic Impact of the third-party assessment: case study Line 3 metro Riyadh – Orange Line*”, proceedings TIS2019 International Congress on Transport Infrastructure and Systems in a Changing World, 23-24 September 2019, Rome.
8. A. Bracciali, R. Dicembre, G. Mancini, G. Megna, **C. Zappacosta**, “*Common Safety Analysis of the AIR Wheelset*”, proceedings IWC XIX International Wheelset Congress, 16-20 June 2019, Venice.
9. L. Baronti, E. Cosciotti, G. Mancini, **C. Zappacosta**, “*Certification of in-service values of equivalent conicity of vehicles*” proceedings IWC XIX International Wheelset Congress, 16-20 June 2019, Venice.
10. S. Vetrucchio, L. Bocciolini, L. Caccamo, G. Mancini, **C. Zappacosta**, “*A simulation environment for railway dynamics and signalling, aimed to European certification of safe vital computers*”, proceedings AEIT International Conference, October 2018, Bari.
11. C. Carganico, **C. Zappacosta**, L. Bocciolini, G. Pancari, G. Ratti, S. Bianchi, F. Piccioli, “*Processo di certificazione e prove del V300ZEFIRO ETR1000 per velocità commerciali fino a 350 km/h*”, proceedings AEIT Conference, October 2016, Capri.
12. M. R. Moreno, G. Robles, B. Tellini, **C. Zappacosta**, J. M. Martínez, J. Sanz, “*Study of an Inductive Sensor for Measuring High Frequency Current Pulses*”, Instrumentation and Measurement, IEEE Transaction on, Vol 60, Issue 5, 2011, p. 1893-1900.
13. M. Marracci, G. Robles, B. Tellini, **C. Zappacosta**, “*Critical Parameters for Mutual Inductance between Rogowski Coil and Primary Conductor*”, Instrumentation and Measurement, IEEE Transaction on, Vol 60, Issue 2, 2011, p. 625-632.
14. M. Bologna, A. Petri, B. Tellini, **C. Zappacosta**, “*Effective Magnetic Permeability Measurement in Composite Resonator Structures*”, Instrumentation and Measurement, IEEE Transaction on, Vol. 59, Issue 5, May 2010, p. 1200-1206.
15. M. Marracci, B. Tellini, **C. Zappacosta**, “*Shielding Effectiveness Measurements for Ferromagnetic Shields*”, Instrumentation and Measurement, IEEE Transaction on, Vol 58, Issue 1, Jan. 2009, p. 115-121.
16. E. Cardelli, S. Di Fraia, B. Tellini, **C. Zappacosta**, “*Analysis and Simulation of Rotating Magnetic Field Diffusion through a Parallelogram Hysteresis Model*”, Magnetics, IEEE Transactions on, Vol. 43, Issue 4, April. 2007, p. 1409-1412.

17. M. Rojas, G. Robles, B. Tellini, **C. Zappacosta**, J. M. Martinez, J. Sanz, "An Inductive Transducer for the Measurement of High Frequency Pulses with Applicability in the Detection of Partial Discharges", Instrumentation and Measurement Technology Conference proceedings, 2010, I2MTC 2010, IEEE, 10-12 May, Austin, p. 375-379.
18. M. Bologna, A. Petri, B. Tellini, **C. Zappacosta**, "Effective Magnetic Permeability Measurement in Composite Resonator Structures", Instrumentation and Measurement Technology Conference proceedings, 2009, I2MTC 2009, IEEE, 5-7 May, Singapore, p. 472-476.
19. G. Becherini, S. Di Fraia, M. Marracci, G. Robles, B. Tellini, **C. Zappacosta**, "Critical Parameters for Mutual Inductance between Rogowski Coil and Primary Conductor", Instrumentation and Measurement Technology Conference proceedings, 2009, I2MTC 2009, IEEE, 5-7 May, Singapore, p. 432-436.
20. M. Marracci, B. Tellini, **C. Zappacosta**, "FEM Analysis of Rogowski Coils Coupled with Bar Conductors", IMEKO TC-4, 2009, September 6-11, Lisbon, vol. CD, p. 5.
21. G. Robles, J. M. Martinez, M. Rojas, J. Sanz, B. Tellini, **C. Zappacosta**, "Designing and Tuning an Air-cored Current Transformer for Partial Discharges Pulses Measurements", Instrumentation and Measurement Technology Conference proceedings, 2008, IMTC 2008, IEEE, 12-15 May, Vancouver, p. 2021-2025.
22. R. Giannetti, M. Marracci, B. Tellini, **C. Zappacosta**, "VI-Characterization of Soft Magnetic Materials by Driving Current or Voltage", IMEKO TC-4, 2008, Firenze, vol. CD, p. 20-24.
23. M. Marracci, B. Tellini, **C. Zappacosta**, "Shielding Effectiveness Measurements for Ferromagnetic Shields", Instrumentation and Measurement Technology Conference proceedings, 2007, IMTC 2007, IEEE, 1-3 May 2007, Varsavia, p. 1-5.
24. E. Cardelli, S. Di Fraia, A. Faba, B. Tellini, **C. Zappacosta**, "FEM Approach to the Numerical Simulation of Vector Hysteresis", Electromagnetic Field Computation, 2006 12th Biennial IEEE Conference proceedings CEFC 2006, IEEE, 2006, Miami, p. 214.
25. E. Cardelli, S. Di Fraia, B. Tellini, **C. Zappacosta**, "Analysis and Simulation of Rotating Magnetic Field Diffusion through a Parallelogram Hysteresis Model", Electromagnetic Field Computation, 2006 12th Biennial IEEE Conference on, proceedings CEFC 2006, IEEE, 2006, Miami, p. 97.
26. M. Marracci, B. Tellini, **C. Zappacosta**, "Determinazione dei Parametri Critici per la Mutua Induttanza tra Bobina di Rogowski e Conduttore Primario", proceedings XXVI GMEE National Conference, 16-19 September 2009, Salerno.
27. M. Marracci, B. Tellini, **C. Zappacosta**, "Caratterizzazione Volt-Amperometrica di Materiali Magnetici Dolci mediante Pilotaggio in Corrente e in Tensione", proceedings XXV GMEE National Conference, 7-10 September 2008, Monte Porzio Catone (RM).
28. M. Marracci, B. Tellini, **C. Zappacosta**, "Misura del Comportamento Magnetico di Materiali Compositi", proceedings XXV GMEE National Conference, 7-10 September 2008, Monte Porzio Catone (RM).
29. S. Di Fraia, M. Marracci, B. Tellini, **C. Zappacosta**, "Caratterizzazione di Materiali Magnetici via Tecnica Sensorless", proceedings XXIV GMEE National Conference, 5-8 September 2007, Turin.
30. S. Di Fraia, M. Marracci, B. Tellini, **C. Zappacosta**, "Un Nuovo Approccio alla Misura di Efficienza di Schermatura di Schermi Ferromagnetici", proceedings XXIV GMEE National Conference, 5-8 September 2007, Turin.
31. **C. Zappacosta** et al., "Hydrogen-fed Gas Turbine with Steam Injection and Co-Generation", proceedings Power Gen, 2005, Milan.
32. **C. Zappacosta** et al., "Comportamento dinamico dei sistemi di processamento del combustibile per Fuel Cell", proceedings Congress ATI, September 2004, Genoa.

Other experiences

- From 2008 to 2010 President of the Permanent Council Commission of the City of Pisa "Status and land use (environment, urban planning, private buildings and traffic), public works (public housing and primary urbanization e respective Rules".
- Design of electrical plants in residential and public buildings.
- Manager of production and logistics of public entertainment events of international relevance.

Personal skills _____

Mother tongue ITALIAN

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken interaction	
English	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Other competences

Social skills ▪ Adaptability, strong flexibility, leadership, solid teamwork skills and ability to work in multicultural environments. Excellent relational skills (acquired both through working on projects and through volunteering activities). Maximum willingness to listen and attention to clients' needs. Ability to interact with different stakeholders.

Organizational skills ▪ Strong leadership skills and comprehensive view of company work, demonstrated with the implementation of a new organizational culture and Company structure. Excellent management, decision-making and entrepreneurial skills. Attitude to problem solving and to risk. Experience in international activities.

Professional skills ▪ Analytical skills, judgment and decision making ;
▪ Comprehensive understanding of the railway sector in relation to the applicable regulatory framework ;
▪ Deep knowledge of specific areas ;
▪ Understanding interconnections with other technical areas relating to interoperability and integration in safe conditions .

Computer skills ▪ Excellent computer skills: Microsoft Windows. Knowledge of programs for library research, Matlab (including Simulink), Aspen, Ansys, GateCycle, Femlab, Multiphysics.

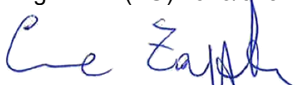
Professional License Qualification as Engineer achieved by passing the relative exam held at the University of Pisa - 2004 session

Professional register Registered since 2006 at the Board of Engineers of Pisa (Section A, Civil and Environmental Engineer, Industrial, Information) with No. 2421

Driving licence Categories A and B

Other information Member of Federmanager – Unit of Rome

Personal data I hereby authorize the processing of my personal data pursuant to art. 13 of the European Regulation (EU) 2016/679 "General Data Protection Regulation"

Signature 

Pursuant to articles 46 and 76 of Presidential Decree 445/2000 the truthfulness of the data and information contained in this curriculum, in faith

Signature 

Date and place Florence, 09/26/2019