Europass Curriculum Vitae

Personal information

First name/ Surname	**Vincenzo Pellegrini, PhD**
Address	63, Via Brogiotti, 56011, Calci (PI), Italy
Telephone	+39 339 1179730　　　　　　Mobile:　+39 339 1179730
Fax(es)	
E-mail	wwvince@gmail.com; vincenzo.pellegrini@iet.unipi.it;
Nationality	Italian
Date of birth	13/04/1984
Gender	Male

Desired employment / Occupational field	**Radio Frequency Communication Engineer**

Work experience

Dates	01/11/11 - Present
Occupation or position held	Lead SDR & RadioCom Developer
Main activities and responsibilities	Parallel and Memory-Based SDR Systems, Baseband processing for RF communication and, more specifically, SDR-based GPS Signal Integrity Monitoring, PHY-Layer Crypto Research for Italian MoD. Radio communication system simulation with both full-software and HW-in-the-loop approaches. Held in-company training classes on SDR and Radio Signal Processing. IDS Corporation also acquired, through an ad-hoc agreement, exclusive ownership of a comprehensive codebase including real-time SDR ETSI DVB-T & DVB-T2 implementations, radio transmission simulation codes and communication system prototypes developed during previous, independent research activities.
Name and address of employer	IDS Corporation, Pisa HQ. Via Enrica Calabresi 24, Pisa Italy www.idscorporation.com
Type of business or sector	RF communication R&D
Dates	01/01/09 - 31/12/2011
Occupation or position held	PhD Student
Main activities and responsibilities	Parallel and Memory-Based SDR-Algorithms, Baseband processing for RF communication, Efficient Coding & Modulation

Name and address of employer	**DSP for Communication Lab** (DSPCOLA) @ University of Pisa, Dept. Information Engineering – Via Caruso, 16 – I-56122 Pisa, Italy
Type of business or sector	RF communication research

Dates	03/2008 - 12/2008
Occupation or position held	Main Software Developer for European GRIDES Project
Main activities and responsibilities	GSM-R communication security enforcement, Software Defined Radio development
Name and address of employer	**WISER S.r.l.** - Wireless Systems Engineering and Research Via Fiume, 23 - 57123 Livorno, Italy www.wiser.it
Type of business or sector	Communication infrastructure security

Dates	03/2006 – 01/2008
Occupation or position held	Undergrad Researcher
Main activities and responsibilities	Software Defined Radio development, DVB-x Multimedia Broadcasting systems, Digital Signal processing for COFDM modulation
Name and address of employer	**DSP for Communication Lab** (DSPCOLA) @ University of Pisa, Dept. Information Engineering – Via Caruso, 16 – I-56122 Pisa, Italy
Type of business or sector	Software Defined Radio based communication systems

Education and training

Dates	01/01/09 - 31/12/2011
Title of qualification awarded	PhD Degree in Telecommunication – Transmission systems Curriculum
Principal subjects/occupational skills covered	Telecommunication systems, digital radio communications, Software Defined Radio, energy and bandwidth efficient transmission systems, efficient computation for Digital Signal Processing
Name and type of organisation providing education and training	University of Pisa, School of Engineering – Via Diotisalvi, 2 – I-56122 Pisa, Italy
Level in national or international classification	PhD degree

Dates	09/2006 - 09/2008
Title of qualification awarded	Master degree in Telecommunication Engineering
Principal subjects/occupational skills covered	Telecommunication systems, digital communications, vehicular communication technology, optical communication, antenna design and radio frequency propagation, cryptography and network security
Name and type of organisation providing education and training	University of Pisa, School of Engineering – Via Diotisalvi, 2 – I-56122 Pisa, Italy
Level in national or international classification	M.Eng. degree

Dates	09/2003 - 07/2006
Title of qualification awarded	Bachelor degree in Telecommunication Engineering

Principal subjects/occupational skills covered	Mathematics, physics, numerical analysis, computer science, electromagnetics, communication networks, signal theory
Name and type of organisation providing education and training	University of Pisa, School of Engineering – Via Diotisalvi, 2 – I-56122 Pisa, Italy
Level in national or international classification	B.Eng. degree

Dates	09/1998 - 07/2003
Title of qualification awarded	Humanistic secondary school certificate (maturità classica)
Principal subjects/occupational skills covered	Ancient Greek and Latin language, Italian language and literature, English language and literature, Philosophy Mathematics, Physics
Name and type of organisation providing education and training	Liceo classico G. Galilei via Croce, 32 - 56125 Pisa, Italy
Level in national or international classification	Secondary school certificate

Personal skills and competences

Mother tongue   **Italian**

Other languages

Self-assessment

European level (*)

	Understanding				Speaking				Writing
	Listening		Reading		Spoken interaction		Spoken production		
English	**C2**		**C2**		**C2**		**C2**		**C2**
French	**A2**		**B1**		**A2**		**A2**		**A2**

(*) Common European Framework of Reference for Languages

Publications

International journals	[1]	"The high speed railway infrastructure in Europe and its dependency on GSM-R wireless communications", Gianmarco Baldini, Igor Nai Fovino, Marco Luise, Vincenzo Pellegrini, Enzo Bagagli, Sergio Rubino, Marcoccio Stefano. Accepted for publication on the "International Journal of Critical Infrastructure Protection", January 2011 issue.
	[2]	"NEWStream": a Long-Range, High-Resilience, Hierarchical Newscast Service for LW/MW/SW Bands", Vincenzo Pellegrini, Filippo Giannetti, Ottavio Picchi , **not yet** submitted to "IEEE Transactions on Broadcasting".
International conferences	[3]	"Soft –DVB, a Fully Software, GNURadio Based ETSI DVB-T Modulator", Vincenzo Pellegrini, Giacomo Bacci, Marco Luise, in proceedings WSR08 - Karlsruhe International Workshop on Software Defined Radio, Karlsruhe Germany 5-6/03 2008
	[4]	"Fully Software OFDM modulation in vehicular, highly time-variant channels. An implemented technology and its results", Vincenzo Pellegrini, Marco Luise, in proceedings ISWCS09, International Symposium on Wireless Communication Systems, Siena, Italy 7-10/09 2009
	[5]	"A real time, fully software, ETSI DVB-T receiver based on the USRP", Vincenzo Pellegrini, Mario di Dio, Luca Rose, Marco Luise, in proceedings WSR10 - Karlsruhe International Workshop on Software Defined Radio, Karlsruhe Germany 3-4/03 2010
	[6]	"On the Computation/Memory Trade-Off in Software Defined Radios", Vincenzo Pellegrini, Mario di Dio, Luca Rose, Marco Luise, in proceedings IEEE GLOBECOM 2010, Miami USA 5-10/12 2010
	[7]	"Computational Potential of the MA Technique", Vincenzo Pellegrini, Giacomo Bacci, Marco Luise, Demo session accepted at IEEE GLOBECOM 2010, Miami USA 5-10/12 2010
	[8]	"Computational Potential of the MA Technique", Vincenzo Pellegrini, Marco Luise, Workshop held at ESA – ESTEC facility, Noordwjik The Netherlands 26/1 2011
	[9]	"The GRIDES (GSM-R Integrity Detection System) for the Italian ERTMS high speed line", Raffaele Malangone, Enzo Marzilli, Cristina Malta (Rete Ferroviaria Italiana), Fabio Senesi (National Safety Railway Authority for Italy, ANSF), Marco Luise, Vincenzo Pellegrini (Università di Pisa Dipartimento di Ingegneria dell'Informazione), Enzo Bagagli,Giuseppe Rubino, (INTECS informatica e tecnologia del software S.p.A.), WCRR – World Congress on Railway Research, Lille, France 22-26/05/2011
	[10]	"The GNSS Operative Monitoring Equipment (GNOME). An SDR-Based Solution for Integrity Assurance", Vincenzo Pellegrini, Fabio Principe, Andrea Tomei, Massimo Mori, Marco Natali, Riccardo Cioni, in proceedings ESA NAVITEC 2012, ESA – ESTEC facility, Noordwjik, The Netherlands 5-7/12/2012
	[11]	"Cryptographically Secure Radios Based on Directional Modulation", Vincenzo Pellegrini, Fabio Principe, Giacomo de Mauro, Rodolfo Guidi, Valerio Martorelli, Riccardo Cioni, in proceedings IEEE ICASSP 2014, Florence, Italy, May 4-9, 2014
	[12]	"Cryptographically Secure Radios Based on Directional Modulation – a real-world, hands-on demonstration", Vincenzo Pellegrini, Fabio Principe, Giacomo de Mauro, Rodolfo Guidi, Valerio Martorelli, Riccardo Cioni, Show & Tell Session accepted at IEEE ICASSP 2014, Florence, Italy, May 4-9, 2014

Other works	[13] "R-DVB: Software Defined Radio Implementation of DVB-T signal detection functions for digital terrestrial television", Tesi di Laurea Specialistica Dott. Luca Rose, Relatori: Prof. Marco Luise, Prof. Filippo Giannetti, Ing. Vincenzo Pellegrini
	[14] "Signal Synchronization and channel estimation/equalization functions for DVB-T software defined receivers", Tesi di Laurea Specialistica Dott. Mario Di Dio, Relatori: Prof. Marco Luise, Prof. Filippo Giannetti, Ing. Vincenzo Pellegrini
	[15] "A bidimensional, Doppler resistant, Time of Arrival (TOA) estimation algorithm for enhanced spread aloha, packet-CDMA networks", Tesi di Laurea Specialistica Dott. Davide Guerrini, Relatori: Prof. Marco Luise, Prof. Filippo Giannetti, Ing. Vincenzo Pellegrini, Ing. Giacomo Bacci

Online Resources

Demo Videos for some SDR systems implemented from scratch	Full-software ETSI DVB-T Receiver http://www.youtube.com/watch?v=XxXW4Gya918
	Full-Software ETSI DVB-T Transmitter over Intel Atom N270 http://www.youtube.com/watch?v=0mGn7FF9Gc8
	Full-Software ETSI DVB-T Single Frequency Network on a Tabletop http://www.youtube.com/watch?v=mQ6YorV4VKE
	IDS – GNOME system: an SDR-based GNSS integrity monitor https://www.youtube.com/watch?v=P-ww9fUMSXQ
Social skills and competences	Used to team-based problem solving
Technical skills and competences	Extensive knowledge of theory and practice of radio communication systems and related signal processing techniques. Significant knowledge of IP-based networking and optical transmission systems.
Computer skills and competences	Knowledge of Linux, MS Windows and MAC OS operating systems; Extensive programming experience in C++, Matlab, Octave, Python; Extensive GNURadio programming experience; Basic Knowledge of Assembler programming; Good LabView Working Knowledge; Experience in Software-Radio-aimed performance-optimized computing; Esperience in OpenOffice, MS Office, LaTeX as document editors
Artistic skills and competences	Advanced Amateur Video-Editor: experience in Apple Computer's Final Cut Pro. Won a few prizes in regional and national festivals.
Other skills and competences	In depth knowledge of DVB-T/H, DVB-T2 standards, achieved in implementing from scratch Soft-DVB, a fully-software ETSI DVB-T modulator capable of running Real-Time on an Atom N270, 2.5W low power CPU and a fully software demodulator for the same signal.
Driving licence	Category B