

## Europass Curriculum Vitae



### Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Email(s)

Homepage(s)

LinkedIn profile(s)

Nationality(-ies)

Date of birth

Gender

Summary

**Massimiliano Masi, M.Sc., Ph.D.**

249, Via di Ripoli, 50126 Firenze, Italy

+39 339 7177534      Mobile: +43 664 88468216

[massimiliano.masi@gmail.com](mailto:massimiliano.masi@gmail.com)

<http://www.mascanc.net/>

<http://www.linkedin.com/in/massimilianomasi>

Italian

28 August 1978

Male

Massimiliano Masi received his M.Sc. in Computer Science, and his Ph.D. from the University of Florence in Grid Computing (with CERN) and Security and Formal Methods, respectively. He is IT Security Architect at Tiani "Spirit" GmbH. He participated in the design and planning of security measures and requirements of several nationwide projects (e.g., Austrian ELGA, eHR.ZA in South Africa, Consent2Share in USA). Dr. Masi was the coordinator of the Core team of the epSOS.eu Security Expert Group and in the e-SENS.eu architectural board, while coordinating all the national eHealth pilots. Masi has been a member of the OASIS and IEEE, and is also the editor of the IHE ITI profile XCF, and participated in the evaluation of the IHE profiles related to security (e.g., XUA, XUA++, SeR, Access Control White Paper, and ATNA). Dr. Masi is acting as consultant for the ENISA, for the EU Commission, and the Austrian Federal Ministry of health. Together with the Hyper e-Health team is promoting and implementing blockchain-based initiatives.

**Desired employment/  
Occupational field**

**Computer Science, Network Security, eServices (eHealth, Smart Grids)**

## Work experience

Dates	04/2007 →
Occupation or position held	Security Architect, Java Developer
Main activities and responsibilities	<p>Security architect for eHealth initiatives/Cloud PaaS, in Europe, in the U.S.A., and in South Africa. Consultant for the Austrian Ministry of Health.</p> <ul style="list-style-type: none"><li>– In 2008 I participated in the definition of security requirements and measures for phase-0 of the eHR.ZA, a national eHealth project held by the South African government for sharing medical data (e.g., DICOM images, CDA documents patient summaries). In the scope of this project, I participated in the definition of the initial infrastructure;</li><li>– In 2009 I specified the security requirements and measures of the eGP-EGOR project in Upper Austria. This project currently exchange CDA documents for 1.5 million of patients, connecting Upper Austria and Tyrol;</li><li>– Since 2008 I am actively participating and contributing to the development of the IHE IT Infrastructure technical framework (<a href="http://www.ihe.net">http://www.ihe.net</a>). I contributed to the development of the IUA, XUA and XUA++ profiles, and I co-authored the Cross Community Fetch (XCF) profile. I participated at more than 10 IHE connectathons and I am active in the ITI Committee;</li><li>– Since 2009 I am an active contributor of the security architecture for the epSOS project (<a href="http://www.epsos.eu">http://www.epsos.eu</a>), a pan-European network for sharing patient summaries and ePrescriptions among EU member states. I co-authored deliverables 3.4.2 (software architecture), 3.7.2 (security services), 3.10.1 (implementation), and 3.A (software architecture for epSOS-II). I am leading the Core team of the Security Expert Group;</li><li>– In 2009 I developed the ATNA profile (audit trails and audit record repository). The implemented audit record repository is actually the ARR for the epSOS participating nations, for the South African eHR.ZA Proof-of-Concept, and in various initiatives in Europe and in the U.S.A.;</li><li>– Since 2008 I am the developer of an Identity Management solution for eHealth projects (based on XUA, XUA++, SAML, XACML, XSPA, and the HI7 RBAC catalogue) actually in production in Upper Austria and in some epSOS participating nations. This software has been used for 10 IHE connectathons as the official identity provider;</li><li>– Since 2009 I am in the leading team (the Fraunhofer/ELGA team) for the deployment of the epSOS software in some EU participating nations;</li><li>– Since 2011 I act as security consultant for the Austrian National Authority and ELGA GmbH. I contributed to the development of the austrian national eHealth infrastructure;</li><li>– In 2011 I participated in the development of the security measures for authentication and patient consent management for the Holyoke Medical Center, in Holyoke, MA (U.S.A.). MEDITECH interoperability;</li><li>– Strong knowledge of the U.S. DIRECT project specifications (S/MIME 3.2, XDR, Security) and DIRECT interoperability. In 2012 I implemented the Tiani-Spirit Hisp-in-a-box (deployed in Maryland and in Pennsylvania);</li></ul>

- Trainer. I teach in official Tiani "Spirit" trainings for new business partners and investors (Forward Advantage, Meditech, CGI, T-Systems, ELCA) in general Network Security and Protocols, ISO 28380 (IHE adoption), IHE methodology and profiles, Software. Courses made in Boston, London, Vienna;
- In 2011 I was a member of the OASIS Trust Elevation Technical Committee, in which I participate to the specification of standard methodologies for elevating authentication and authorization procedures. My focus is to use such techniques for Healthcare Emergency Treatments;
- Since 2012 I am representing epSOS within the e-SENS, European Interoperability Framework (EIF), and eHGI european initiatives. In these projects I was responsible moderator for the national adoption of the new European regulation for eID and eSignature (eHGI); eHealth consultant for the EIF, and epSOS technology representative in e-SENS. In particular my task in this e-SENS project is to bring the european eHealth infrastructure to the new upcoming eInfrastructure for the European Digital Single Market. I am leading various security-related task forces and I act as IT reference architect for the member states piloting in the e-SENS, for which I participated in the definition of the CEF building blocks relevant for eHealth. I provide the test assertions used by the EU tool and Gazelle under the GITB for instrumenting tests for the cross sectorial building blocks. Interview made for ePractice.eu: <https://www.youtube.com/watch?v=ktRdUMfuDz0>;
- In 2013 I started a survey software interoperability and IT security for Energy (ENTSOE) and Gas (ENTSOG). In particular I am studying on a possible adaptation of the ISO/TC 215 methodology to Smart Grids. I am a influencer of the IES project, <http://www.smartgrids.at/plattform-aktivitaeten/ies-integrating-the-energy-system-austria.html>;
- In 2014 I led the Healtheway certification program (<http://healthewayinc.org>) for Inland Northwest Health Services (<https://www.inhs.info>). I discovered and patched several bugs of the security of the CONNECT open source (<https://connectopensource.atlassian.net>, not yet released, at the time of writing). The outcome of this program has been used as consultancy by Trillium Bridge project (<http://www.trilliumbridge.eu>);
- In 2014 I played the role of IT Agile Security Architect and Developer in the Consent2Share consortium (<http://wiki.siframework.org/SAMHSA+Consent2Share+Project>), coordinating Tiani Spirit resources under a strict agile processes. This project aims at interconnecting different security and semantics domains under the Maryland legislation;
- Since January 2016 I am in the technical committee of the OpenNCP. My main task is to refactor the implementation to align it to the epSOS specifications. <http://openncp.atlassian.net>, <https://bitbucket.org/openncp/ehealth>;
- Since June 2016 I am leading the task of the eIDAS Regulation adoption in the eHealth domain across europe, suggesting technical solutions discussed by the eHN ([http://ec.europa.eu/health/ehealth/policy/network/index\\_en.htm](http://ec.europa.eu/health/ehealth/policy/network/index_en.htm)). I am coordinating the international pilots between the EU Commission, Austria, Italy, Portugal, and Greece. (Results will be published at the end of the e-SENS project);
- Since June 2016 I act as consultant for ENISA, the European Union Agency for Network and Information Security. I am conducting a study on eHealth and Cloud security. Partial information can be found here: [https://ec.europa.eu/eusurvey/runner/ENISA\\_eHealth\\_and\\_Cloud](https://ec.europa.eu/eusurvey/runner/ENISA_eHealth_and_Cloud);
- Since 2017 I am working as a facilitator to bring the CEF eDelivery building block in the healthcare domain by promoting the AS4 profile in the IHE [http://wiki.ihe.net/index.php/ITI\\_Planning\\_Committee\\_2017/2018\\_Meetings](http://wiki.ihe.net/index.php/ITI_Planning_Committee_2017/2018_Meetings);

Main activities and responsibilities	(Continued)
	<ul style="list-style-type: none"> <li>- Together with the Hyper e-Health Team (University of Southampton / Tiani) I have been leading the work for adopting the Hyperledger Fabric private blockchain to solve the problem of data provenance in healthcare. This work has been selected as finalist for the <i>provenance challenge</i> from the Office of the National Coordinator (ONC) in USA <a href="https://www.cccinnovationcenter.com/challenges/provenance-challenge/">https://www.cccinnovationcenter.com/challenges/provenance-challenge/</a>;</li> <li>- I am the technical and security advisor for two blockchain initiatives, <a href="https://www.grapevineworldtoken.io">https://www.grapevineworldtoken.io</a>, and <a href="https://www.jdctoken.io">https://www.jdctoken.io</a>.</li> </ul>
Name and address of employer	Tiani "Spirit" GmbH, Guglgasse 6. Gasometer A, 1110 Wien, Austria / Europe <a href="http://www.tiani-spirit.com">http://www.tiani-spirit.com</a> , +43 66 48 40 64 96
Type of business or sector	Computer Science / Information Technology for the Healthcare Enterprises
Dates	02/2007 - 04/2007
Occupation or position held	C software developer
Main activities and responsibilities	C++ developer for ACX IBM libraries
Name and address of employer	<b>Keywords:</b> C, C++, AIX, ACX, software engineering Savino del Bene IT consulting, Via Gozzoli Benozzo, 5/2, 50018 Scandicci (Florence) <a href="http://www.sdb.it">http://www.sdb.it</a>
Type of business or sector	Computer Science / Information Technology
Dates	01/2006 - 12/2006
Occupation or position held	IPMIToolSuite developer, Grid computing developer, Network Security developer
Main activities and responsibilities	Grid services and IPMI developer, user authentication solutions for the LHC computing GRID
Name and address of employer	<b>Keywords:</b> SPNEGO, GSSAPI, PKI, SSL, Grid Computing, IPMI, Ipmitool, OpenIPMI, linux kernel 2.6, SLC4, Grid certificates management, Perl, Java, C++, Virtual Organizations CERN, CH-1211 Geneve 23, Switzerland, <a href="http://www.cern.ch">http://www.cern.ch</a> , <a href="https://twiki.cern.ch/twiki/bin/view/FIOgroup/TsiSection">https://twiki.cern.ch/twiki/bin/view/FIOgroup/TsiSection</a>
Type of business or sector	Computer Science / Research
Dates	01/2004 - 03/2012
Occupation or position held	Linux and AFS cell administrator
Main activities and responsibilities	Creator and maintainer of the OpenAFS cell <a href="http://pb.unifi.it">pb.unifi.it</a> and mail services for the secretariat of the University of Florence
Name and address of employer	<b>Keywords:</b> Kerberos, AFS, IMAP, Cyrus, apache, postfix, XEN Università degli studi di Firenze - Polo biomedico
Type of business or sector	Computer Science / System Administration
Dates	01/2001 - 01/2007
Occupation or position held	Web developer
Main activities and responsibilities	Web developer for italian public administrations
Name and address of employer	<b>Keywords:</b> PHP, Apache, MySQL Comune di Castelnuovo Berardenga - Via Garibaldi, 4 - 53019 Castelnuovo Berardenga (SI) - tel. 0577-351303 fax 0577-355273
Type of business or sector	Computer Science
Dates	01/2001 - 07/2005

Occupation or position held Main activities and responsibilities	Developer Fal.Co S.a.s, a company composed by a team of students and senior developers. I worked as C++ developer <b>Keywords:</b> C/C++, COBOL, Qt, Linux, Progress SQL
Name and address of employer Type of business or sector	Fal.CO. S.a.s., di Riccardo Falcucci, 11, via Poggio Bracciolini, 50126 Firenze, Italy Computer Science / System Administration
Dates	01/2000 - 10/2000
Occupation or position held Main activities and responsibilities	Chartered Surveyor Chartered Surveyor for the local public administration (Comune di Firenze). I was involved on a major cadastral survey of private buildings in the area of Florence. Here I renewed cadastral maps by performing on-site measurements and technical drawings
Name and address of employer Type of business or sector	Comune di Firenze Public Administration
 <b>Education and training</b>	
Dates	15/7/2013
Certification Name	ISO IEC 27002 Foundation
Certification Authority	Exin (Bitil.com)
Dates	17/10/2012 - 19/10/2012
Certification Name	ITIL (v3) Foundation
Certification Authority	APMG International (QPR)
Dates	01/2008 - 5/2012
Title of qualification awarded	Ph.D.
Principal subjects/Occupational skills covered	Network Security, Formal Methods applied to security, Formalization of OASIS standards, eHealth security. Title of the thesis: <i>On Authentication and Authorisation Issues in eHealth Systems</i> . As important results I proposed a formal semantics for XACMLv2 and v3, and I discovered a security issue in the IHE specifications.
Name and type of organization providing education and training	Università degli studi di Firenze, Facoltà di Scienze Matematiche Fisiche e Naturali, Dottorato in Informatica e Applicazioni (DIA), XXIII ciclo
Level in national or international classification	Doctor of Philosophy with "Doctor Europæus" mention, Dottorato di Ricerca, menzione di Dottorato Europeo, vote 3/3 (maximum) <i>Note: the Ph.D. course has been sponsored by Tiani "Spirit" GmbH</i>
Dates	07/2007
Title of qualification awarded	Abilitazione all'esercizio della professione di Ingegnere Dell'Informazione
Principal subjects	Ingegneria dell'Informazione
Level in national or international classification	Esame di stato, vote 55/60
Dates	09/1997 - 02/2006
Title of qualification awarded	M.Sc., Master degree in Computer Science

Principal subjects/Occupational skills covered	Numerical Application of the Computer Science, Parallel Programming, Computer Aided Geometric Design, Bioinformatics, Financial Applications, acquisition and treatment of large amounts of numerical data, networking, Web Programming, distributed systems. Title of the thesis: <i>Using Intelligent Platform Management Interface (IPMI) at the LHC GRID</i>
Name and type of organization providing education and training	Università degli studi di Firenze, Facoltà di Scienze Matematiche Fisiche e Naturali, corso di Laurea in Informatica
Level in national or international classification	Master degree in Computer Science / Laurea quinquennale in informatica vecchio ordinamento, pre-riforma, 103/110
Dates	09/1992 - 07/1997
Title of qualification awarded	Diploma di maturità
Principal subjects/Occupational skills covered	Perito Agrario
Name and type of organization providing education and training	Istituto Tecnico Agrario di Firenze
Level in national or international classification	High school degree in Agriculture

## Publications and Conferences

[CERN06]	H. M. Caçote, M. Masi, <i>Using the Intelligent Platform Management Interface (IPMI) at the LHC GRID</i> , published in the (internal) CERN Bulletin (2006), available at <a href="https://twiki.cern.ch/twiki/bin/viewfile/FIOgroup/IpmiRef?rev=1;filename=ipmicern.pdf">https://twiki.cern.ch/twiki/bin/viewfile/FIOgroup/IpmiRef?rev=1;filename=ipmicern.pdf</a> . Also accepted for poster sessions in the conferences eScience 2007, and INGRID 2008
[EMMIT08]	M. Masi, M. Meoni, <i>Using IHE profiles for an healthcare DataGRID based on AliEn</i> , in EMMIT08, Tripoli, Libya
[OpenAFS2009]	A. Mancini, M. Masi, <i>OpenAFS and SAML through the web: is it a good idea?</i> , in Open AFS 2009, Rome, Italy
[ICISS2009]	M. Masi, R. Pugliese, F. Tiezzi, <i>On secure implementation of an IHE XUA-based protocol for authenticating healthcare professionals</i> , in Prakash, A., Gupta, I., eds.: ICISS. Volume 5905 of Lecture Notes in Computer Science, Springer (2009) pp 55- 70
[EHEALTH2010]	M. Masi, R. Maurer, <i>On the usage of SAML delegate assertions in an healthcare scenario with federated communities</i> , in Szomszor, M., Kostkova, P., eds.: eHealth. Volume 69 of LNICST, Springer (2010) pp 212-220
[HEALTHCOM2011]	M. Masi, R. Pugliese, F. Tiezzi, <i>Security analysis of standard- driven communication protocols for healthcare scenarios</i> , in Proceedings of the 13th IEEE International Conference HEALTHCOM 2011, Columbia (MO) pp 304-311
[AFRICOM2011]	M. Masi, R. Pugliese, F. Tiezzi, <i>e-Health for Rural Areas in Developing Countries: Lessons from the Sebokeng Experience</i> , in Popescu-Zeletin, R., Jonas, K., Rai, I.A., Glitho, R., Villafiorita, A., eds.: e-Infrastructure and e-Services for Developing Countries (AFRICOM 2011), Zanzibar (Tanzania). Volume 92 of LNICST, Springer (2012), pp 187-196
[ESSOS2012]	M. Masi, R. Pugliese, F. Tiezzi, <i>Formalisation and Implementation of the XACML Access Control Mechanism</i> , in Barthe, G., Livshits, B., Scandariato, R., eds.: ESSoS: Engineering Secure Software and Systems, Volume 7159 of Lecture Notes in Computer Science, Springer (2012), pp 60-74
[JOMS2012]	M. Masi, R. Pugliese, F. Tiezzi, <i>Security Analysis of Standards-Driven Communication Protocols for Healthcare Scenarios</i> , in Journal of Medical Systems: Volume 36, Issue 6 (2012), pp 3695-3711
[MDsec 2012]	M. Busch, N. Koch, M. Masi, R. Pugliese, F. Tiezzi, <i>Towards Model-Driven Development of Access Control Policies for Web Applications</i> , in MoDELS 2012, Model-Driven Security Workshop, pp 4 and following

[HEALTHINF 2013] A. Margheri, M. Masi, R. Pugliese, F. Tiezzi, *On a Formal and User-Friendly Linguistic Approach to Access Control of Electronic Health Data*, in HEALTHINF 2013, pp 263-268

[WS-FM 2013] A. Margheri, M. Masi, R. Pugliese, F. Tiezzi, *Developing and Enforcing Policies for Access Control, Resource Usage, and Adaptation: A Practical Approach*, in WS-FM 2013, pp 85-105

[CISCO2014] M. Masi, A. Timmermann et al., *Big Data in the Public Sector*, in Cisco Blog, <http://blogs.cisco.com/government/public-sector-big-data>

[Med-e-Tel 2016] F. Wisniewski, D. G. Katehakis, M. Masi, S. Bittins, *Improving Cross-Border European ePrescription and Patient Summary Services through e-SENS Cross-Sectorial Building Block*, Med-e-Tel 2016, [https://www.medetel.eu/download/2016/parallel\\_sessions/presentation/day1/Improving\\_Cross\\_Border\\_European.pdf](https://www.medetel.eu/download/2016/parallel_sessions/presentation/day1/Improving_Cross_Border_European.pdf)

[PHEALTH016] F. Wisniewski, D. G. Katehakis, M. Masi, S. Bittins, *Towards a Cross-domain Infrastructure to Support Electronic Identification and Capability Lookup for Cross-border ePrescription / Patient Summary Services*, pHealth 2016, to appear

[OVE2016] M. Masi, *A new step for Energy Interoperability*, Ove Aktuell, Aug 2016, <http://www.mascanc.net/ove.pdf>

[TSE17] A. Margheri, M. Masi, R. Pugliese, F. Tiezzi, *A Rigorous Framework for Specification, Analysis and Enforcement of Access Control Policies*, IEEE Transactions on Software Engineering, Oct 2017, to appear

[IHIC17] D.G. Katehakis (GR), J. Goncalves (PT), M. Masi (AT), S. Bittins (DE), *Interoperability Infrastructure Services to enable Secure, Cross-Border, Operational eHealth Services in Europe*, Proceedings of the 17th International HL7 Interoperability Conference, pp 40-51, IHIC2017, Oct 2017, ISBN 97896099062-3-4

## Personal skills and competences

Mother tongue(s)

Other language(s)

*Self-assessment  
European level<sup>(\*)</sup>*

**English**  
**French**

Social skills and competences

Computer skills and competences

## Italian

English, French

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	C2	C2	C2
B2	B1	B2	B1	A2

<sup>(\*)</sup>Common European Framework of Reference (CEF) level

I have a proactive character. I like short business travels, everywhere. I enjoy working in international domains. I have a lot of teleworking experience. I have a first level HACCP license (I volunteer as barman) and a First Aid in Pediatric ages qualification and defibrillator (P-BLSD). Around the year 1996 I co-founded the Firenze Linux User Group (FLUG). I am a computing reviews reviewer ([http://www.computingreviews.com/browse/browse\\_reviewers.cfm?reviewer\\_id=123569](http://www.computingreviews.com/browse/browse_reviewers.cfm?reviewer_id=123569)). My Publons profile: <https://publons.com/a/1175203/>.

- **Programming Languages:** Java. ANSI C, C++, PHP, SQL, Matlab, Prolog were part of my background.
- **Operating Systems:** Unix (Linux, NetBSD, OpenBSD, FreeBSD, SCO OpenServer, AIX), MS Windows (all versions), Mac OS X
- **Software packages** Eclipse (my favourite tools are ECL-EMMA, FindBugs, CheckStyle, JMock). Matlab, Octave, Apache, MySQL, AFS (OpenAFS and ARLA),  $\LaTeX$ 2e, OpenLDAP, PAM, SAMBA, KerberosV, PVM, MPI, JBoss, Globus, JAX-WS, Axis2, OpenSAML, Shibboleth 2.0, JUnit. I am a fan of TDD and Agile.

Artistic skills and competences

Sport interests

Driving licence(s)

## Additional information

I started to play classical guitar in 1997. I studied latin jazz and bossa nova for 6 years.

I like to play baseball, I was third base with CERN's Quarks. Now I am playing with Antella's Turtles. I like hiking and horse riding. I have the first-level coach qualification for junior baseball teams. My other favorite sport is running. I am part of the *CRAL Dipendenti Comunali* sport club, where I am an happy half-marathon runner.

Italian driving license (A, B)

These persons are familiar with my professional qualification and my character:

**Prof. G. Landi**

M.Sc. Supervisor

Phone: +39 055 2307622

Fax: +39 055 229330

50125 Firenze

Email: gregorio.landi@fi.infn.it

Italy

**Prof. R. Pugliese**

Ph.D. Supervisor

Phone: +39 055 4237450

Fax: +39 055 4237436

50134 Firenze

Email: rosario.pugliese@unifi.it

Italy

**Hugo José Monteiro Caçote**

Cern Supervisor

Phone: +41 22 76 74341

Fax: +41 22 76 69308

Mailbox: G22110 CERN

Email: Hugo.Cacote@cern.ch

Geneve, Switzerland

Florence (Italy), Geneve (Switzerland), Vienna (Austria), March 1, 2018

This document is made using L<sup>A</sup>T<sub>E</sub>X<sub>2</sub>ε