

# CURRICULUM VITAE of FRANCESCO FASSI

## PERSONAL DATA

**NAME** Francesco Filippo Emanuele Fassi  
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**NATIONALITY** Italian  
**PLACE AND DATE OF BIRTH** Bergamo - September 19, 1975

## PERSONAL SKILLS AND COMPETENCES

### LANGUAGES

**MOTHER TONGUE** ITALIAN

#### OTHER LANGUAGE(S)

	<b>Understanding</b>	<b>Writing</b>	<b>Speaking</b>
ENGLISH	C1 (Advanced)	C1 (Advanced)	C1 (Advanced)
GERMAN	B2 (Upper intermediate)	B2 (Upper intermediate)	C1 (Advanced)

## SOCIAL SKILL AND COMPETENCES

Ability to work well as part of a team establishing good relationships with colleagues and superiors. He cultivates enthusiastically good relations with members of the national and international scientific community.

Good skill in scientific communication to present and to illustrate the results of his work, gained through extensive experience in national and international conferences.

## ORGANISATIONAL SKILLS AND COMPETENCES

He matures great experience as a coordinator and director of diversified and multidisciplinary teamwork showing particular predisposition to the identification of the roles and abilities of the involved people, in order to organize a coordinated, ongoing and productive teamwork.

Ability to carry out research projects and to effectively manage short and long-term deadlines.

Excellent qualities of Problem Solving.

## TECHNICAL SKILLS

He has excellent and continuous experience in the field of survey with topographic instruments, laser scanning and photogrammetric techniques. He has proven ability in data processing. Thanks to this

experience in the field, he matures good knowledge of the methods and the issues related to the survey and the integration of the different measurement techniques especially in the field of Cultural Heritage, developing considerable critical ability and predisposition to the identification of future developments and possible lines of research to be undertaken.

He shows strong sensitivity and autonomy in the use of measuring instruments thanks to the constant updating in the years that has allowed him to test first-hand the continuous technological and methodological evolutions.

He has great experience in the use of software-related processing and survey data management (Topographical, photogrammetry, laser scanning and modeling).

## TITLES, EDUCATION AND TRAINING

<b>JANUARY 27, 2015</b>	Habilitation for Associate Professor in in the scientific - disciplinary sector 08/A4 (II Fascia - abilitazione scientifica nazionale).
<b>DECEMBER, 2014</b>	APR Systems pilot ENAC licence.
<b>APRIL 27, 2009</b>	PhD with honours in Geodesy and Geomatics. (Politecnico di Milano – XX cycle) Discussion of the thesis entitled: “Integration of traditional and innovative technologies for survey and modeling of Cultural Heritage”.
<b>APRIL 2007-DEC. 2007</b>	Visiting researcher at the Institute of Geodesy and Photogrammetry (prof. Armin Grün) - ETH – Zurich. Research topic: “Photogrammetry and laser scanner data segmentation for facade recognition”.
<b>APRIL 2004 – APRIL 2006</b>	Visiting researcher by CETMA research centre (Center of planning, design and technology of Material) in Brindisi (Italy). Research topic: “Photogrammetric and laser scanner data integration for the diagnostic of Cultural heritage”.
<b>2004</b>	CISM (International Centre for Mechanical Sciences, Energy and Environment, Fluid Mechanics) Course: “La Tecnica del Laser Scanning Terrestre” (Udine)
<b>2002</b>	Admitted to the Engineer Profession (sector Environment and Territory).
<b>2001</b>	Master Degree in Environmental and Land Planning Engineering (Politecnico di Milano). Discussion of the thesis entitled: “Not-invasive GPR survey of water pipe and tow ropes.” with a score of 83/100. Supervisor: Prof. Luigi Zanzi (Ord. quinquennale tabella XXIX ex regio decreto 30/09/1938 n°1652 e successive modifiche del DM 22/05/1995 CTU n°166 del 18/07/1995)
<b>1994</b>	Scientific High School Graduate with score of 48/60

## RESEARCH AND ACADEMICALS EXPERIENCES

**SINCE FEBRUARY 2016 UNTIL NOW**

<b>TYPE OF EMPLOYMENT</b>	Senior Researcher Type B (TD SSD ICAR/06 Topography and cartography) (Ricercatore senior legge 240/10 - t.det. a tempo pieno. (ICAR/06 - Topografia E Cartografia))
<b>INSTITUTE</b>	3DSurvey Group Laboratory - Politecnico di Milano, Italy – ABC department.

**RESEARCH TOPICS** 3D real based modelling to BIM;  
BIM for Cultural Heritage - design and development;  
Automatic Photogrammetry: accuracy in automatic reconstruction for big/real scale representation;  
Underwater Photogrammetry;  
Aerial UAV Photogrammetry and APR System development;  
Virtual reality.

**SINCE SEPTEMBER 2013 UNTIL FEBRUARY 2016**

**TYPE OF EMPLOYMENT** Junior Researcher Type A (TD SSD ICAR/06 Topography and cartography) (Ricercatore junior legge 240/10 - t.det. a tempo pieno. (ICAR/06 - Topografia E Cartografia))  
**INSTITUTE** 3DSurvey Group Laboratory - Politecnico di Milano, Italy – ABC department.  
**RESEARCH TOPICS** 3D real based modelling to BIM;  
BIM for Cultural Heritage - design and development;  
Automatic Photogrammetry: accuracy in automatic reconstruction for big/real scale representation;  
Underwater Photogrammetry;  
Aerial UAV Photogrammetry and APR System development;  
Virtual reality.

**MAY 2012 - MARCH 2013**

**TYPE OF EMPLOYMENT** Temporary Researcher  
**INSTITUTE** Fondazione Politecnico di Milano, seconded to 3DSurvey Group Laboratory - Politecnico di Milano, Italy – ABC department.  
**RESEARCH TOPICS** Survey technologies for extensive case of studies;  
3D real based modelling;  
Structure from motion (SfM) range imaging technique;  
Monitoring.

**MAY 2010 - APRIL 2012**

**TYPE OF EMPLOYMENT** Temporary Technical (D1)  
**INSTITUTE** 3DSurvey Group Laboratory - Politecnico di Milano, Italy – ABC dep. (Scientific head Prof. Carlo Monti)  
**RESEARCH TOPICS** Survey technologies and methods for extensive case of studies;  
3D modelling and BIM;  
Monitoring

**APRIL 2008 - APRIL 2010**

**TYPE OF EMPLOYMENT** Research Assistant (Assegnista di Ricerca - Legge 27 dicembre 1997, n. 449)  
**INSTITUTE** 3DSurvey Group Laboratory - Politecnico di Milano, Italy – BEST department (Scientific head Prof. Carlo Monti)  
**RESEARCH TOPICS** 3D survey methodologies comparison and integration;  
Digital cameras calibration;  
Automatic features extraction;  
Automatic wireframe modelling;  
Survey technologies and methods for extensive case of studies.

**APRIL 2006 - APRIL 2008**

**TYPE OF EMPLOYMENT** Research Assistant (Assegnista di Ricerca - Legge 27 dicembre 1997, n. 449)  
**INSTITUTE** Institute of Geodesy and Photogrammetry - Laboratory of Topography, Photogrammetry and GIS - DIIAR Dep. - Politecnico di Milano, Italy  
**RESEARCH TOPICS** 3D Survey methodologies comparison and integration;

Digital cameras calibration;  
Automatic features extraction;  
Automatic wireframe modelling.

#### **APRIL 2004 - APRIL 2006**

**TYPE OF EMPLOYMENT** Research Assistant (Assegnista di Ricerca - Legge 27 dicembre 1997, n. 449)  
**INSTITUTE** CETMA Research Centre (Brindisi-Italy)  
Institute of Geodesy and Photogrammetry - Laboratory of Topography, Photogrammetry and GIS - DIIAR Department - Politecnico di Milano, Italy (Scientific head Prof. Carlo Monti)  
**RESEARCH TOPICS** Integration between Close Range Photogrammetry and laser scanning technology;  
Integration of multispectral images with 3D geometry;  
Point cloud high accuracy texturing and visualization;  
Digital cameras calibration;  
Virtual reality;  
Real Orthophoto.

#### **FEBRUARY 2002 - APRIL 2004**

**TYPE OF EMPLOYMENT** Research Assistant (Assegnista di Ricerca - Legge 27 dicembre 1997, n. 449)  
**INSTITUTE:** Institute of Geodesy and Photogrammetry Laboratory of Topography, Photogrammetry and GIS - DIIAR Department - Politecnico di Milano, Italy (scientific head Prof. Carlo Monti)  
**MAIN RESEARCH TOPICS** Cartography and GIS: developing methodology and algorithms for the processing of Classic Digital Maps in order to structure Geographic Information Systems Research in Aerial Photogrammetry: inertial systems, image orientation, DTM generation, orthophoto production.

### **MAIN PROJECTS:**

**2014-2017:** He participates at “**San Marco 3D project – Experimental survey of high precision leveling of the the Basilica and the construction of three-dimensional model of the architectural complex**” (**Progetto San Marco 3D - Rilievo sperimentale della livellazione di alta precisione dei capisaldi posti nella Basilica e sviluppo del modello tridimensionale complessivo del complesso Basilicale**). Research agreement with Procuratoria di San Marco – Venezia. He coordinates the survey team focalising the attention on the photogrammetric survey of the Basilica, the construction of the three-dimensional model of the complex and the creation of the ad hoc built BIM System.

**2014 – 2015:** He is creator and coordinator of the **3DBIMSG system**. It is an extension of the WEBBIM created for the Milan Cathedral, a more general system dedicated to Cultural Heritage. It works online and it is able to visualize complex 3D model (of little objects or huge buildings) on the web and to connect to them, actually as a real information system, different kind of information that can be structured autonomously by the user in database created ad hoc in function of the different case of studies. Due to this research job, he is co-holder of the patent proposal n° MI2014A002016.

**2014 – 2015:** He develops an UAV system for photogrammetric (oblique images) and multispectral acquisition. The UAV System, named **3DSL\_MR6001**, is certified by ENAC for application in “NO RISK AREAS”.

**2014 – 2015:** He participates to **O.A.S.I.S. Project** (Old Agricultural Sites and Irrigation Systems). The main activities is the 3D survey of the late-Roman cultivation and the remains of Umm al-Dabadib, Kharga Oasis (Egypt’s Western Desert). Main topic of the research is emergency survey of extensive archaeological areas, methodologies and techniques. The Project, coordinated by Dott. PhD. Corinna Rossi, is conducted in

collaboration with MUSA (Musei delle Scienze Agrarie, Università degli Studi di Napoli Federico II), with the support of National Geographic (National Geographic/Waite Grant).

**2014 - 2015:** He participates in the **SINERGIA PROJECT**: “Innovative systems for the production of Renewable Energy through the management of equipment Arboriculture short cycle”. (Misura 124 PSR Campania 2007-2013). In the project, the participant is involved in the photogrammetric survey using UAV multispectral acquisition for monitoring vegetation growth and health. Main topic of the research is automatic extraction of geometric data, multi-temporal survey, and vegetation measurement at big representation scale.

**2014-2015:** He participates in the **SMART Culture Project**. The research topics are the creation of guidelines for digitizing objects at large representation scale using image based techniques, calibration methods and data validation. This project contributes to the realization of the 3DBIMSG system as an informative platform for sharing models and data of Cultural Objects. The project is conducted together with different partners (Engineering, Cefriel, WebRatio, CiaoTech, Innovation Engineering and Optec) Main partner is Open Technologies Company.

**2012 – 2015:** He is operational manager of the project “**Survey of the artefacts of man-made structures unearthed during excavations of the underground Station of Metro Line n°1 of Naples (Italy)**”. The project has the purpose to prepare all scientific documentation of archaeological findings that need to be destroyed or moved to allow the execution of the great public work. The scientific research is focused on the identification of survey methods enabling extremely expeditious and automatic rapid acquisition and generation of virtual models of detail of the structures within the guidelines required by the Ministry of Heritage and Culture.

**2013-2015:** He participates as coordinator in the Project “Survey of the structures and of the marble blocks of the Madonna dell’Albero and San Giovanni Bono Altars altars “ (**“Rilievo delle strutture e dei conci dell’altare della Madonna d’Albero e dell’Altare di San Giovanni Bono”**).

**2004 – 2015:** He takes part in the campaigns of calibration pitch helicopters at the military heliport of Orio al Serio and Agusta Westland Private Heliport of Vergiate and Tomilino (Moscow) with topography and astronomical measurements.

**2012 - 2013:** He is the creator and coordinator of the “**Project Spire3D-The WEBBIM**”, for the development of an advanced BIM system, that allows the easy management and sharing of the huge 3D model built for the restoration of the main Spire. Main task is the development of an advanced import/export system to allow easy managing of the 3D data inside the modelling software and the fruition of the model into WEB in meantime. The 3D representation can be integrated with external different kind of data and is easily updatable by users themselves. The system is developed ad hoc to support the facility management of the cathedral supporting restoration and construction works, facilitating automatic geometric analysis and storing of past, present and future modifications (4D philosophy).

**2009 – 2012:** He participates as research director in the project “**Project SPIRE3D the Survey of Main Spire of Milan Cathedral**”. In particular, he was involved in the research activities aimed to identify and test integrated survey techniques for the three-dimensional modelling big scale reconstruction of the complete architectural structure of the spire. He coordinates survey and modelling phases.

**2009:** It coordinates the team for the survey of the underground structures of the Torre Velasca (Milan). The topographic and laser scanning survey was aimed at the design of the scaffolding for future restoration operations. He designs the guidelines for the survey at 1:1 scale of geometry and thickness of the plaster

**2010 – 2012:** He works to develop the software BIER (Best Image Exact re-Projection) for accurate texturing photogrammetric laser scanner point cloud and the automatic orientation of images.

**2010:** He participate in the research project **“Project SPIRE. 3D Survey of the main Spire of Milan Cathedral”** by developing and testing a UAV (Unmanned Aerial Vehicle) system able to survey photogrammetrically the external parts of the Main Spire of the Milan Cathedral.

**2009:** He organize and takes part to the tests conducted in order to define the guidelines for speed archaeological survey activities in case of large and repetitive application extended for the purpose of planned maintenance. The case of study was the Claudio Aqueduct in the park of the Roman aqueducts. Aim of the test was to identify methodologies and integrated techniques for creating three-dimensional models with high resolution and automatic extraction of orthophoto.

**2008:** He participates in the UNESCO project for the **“Preservation of historical heritage of Mesopotam and Rusan”** (Albany). He is responsible for the two campaigns of photogrammetric survey, topographic and laser scanner of the Byzantine church of St. Nicholas in Mesopotam (Albania).

**2006:** He participates in the **'Project Mantegna'**, interdisciplinary work involving different department of Politecnico di Milano, CNR and INOA. Subject of the survey and research is the ‘Measurement of the total form of the Andrea Mantegna's Trivulzio Madonna altarpiece’, preserved at the Castello Sforzesco in Milan. Testing first attempts for photogrammetric high-resolution DSM generation.

**2004 – 2006:** He participates in the **“SIDART Project” (Integrated System for the Diagnostic of cultural heritage)”** (Programma Operativo Nazionale (PON) - Ricerca, Sviluppo tecnologico ed Alta Formazione) Coordinator of the team of programmers regards the development of one software for the visualization of 3D point cloud, the integration of high-resolution digital images, multispectral images, thermal images and virtual-restoration tools. Execute a series of survey tests in: SS. Stefani Crypt - Vaste (Lecce), Santa Maria Antiqua (Roman Forum - ROM), Rosano Cross (Opificio delle Pietre Dure – Florence), Tomb of Demoni azzurri (Necropolis of Tarquinia)

**2003 - 2004:** He takes part in the campaigns of photogrammetry and laser scanner survey at the Villa Reale in Monza. Tasks of the research was i) creation of high-resolution rectified images of the facades ii) real-based modelling and automatic reconstruction of wireframe 3D models of facades from point clouds laser-scanner (main part of the PhD thesis activity).

**2003 -2015:** He takes part to the monitoring of the San Marc Basilica in Venice.

**2003 – 2004:** He participates to the topographic and 1:1 photogrammetric survey of Basilica di San Marco’s pavement in Venice and elaborate all the data from the bundle adjustment to the DSM and final global orthophoto.

**2004:** He is involved as supervisor in the measurement campaign for the testing of the cartography at a scale of 1: 1000 of the City of Milan.

**2004:** He participates to the Laser scanning and topographic survey of the Basilica of San Lorenzo in Milan.

**2002 – 2003:** “Structure, generation and realization of the Geographic Information System for Erba municipality”. Topic of the research was to elaborate methods to transform the old numeric cartography in a structured GIS (ESRI Platform) and Municipal database integration.

**2003:** He participates in the project: **“Structure, generation e realization of the Geographic Information System for the historical centre of Vighizzolo and Cascina Amata (Cantù-Italy)”**. Project aimed at producing a decision tools to support the municipalities offices.

**2003:** He participates in the project **“Integration of Inertial Systems for the positioning in the aerial photogrammetry project”** (National Research program Cofin02 - coordinator Prof. Riccardo Galetto). In particular, he was involved in the Aerial triangulation of the flight at scale 1:8000 e 1:5000 on the town of

Pavia for the test of the integration process between Direct Photogrammetry and the classical aerial triangulation for the studies of the accuracy in the orientation phase.

**2002:** Development of a Geographic Information System to support the editing and the management of the provincial Cave strategy project (Calculation of extracted volumes, calculation of transported volumes, height measurements, cartography updating).

## OTHER ACADEMICAL ACTIVITIES

It works as a reviewer for these scientific journals:

- “Photogrammetric record” - Published jointly by the Remote Sensing and Photogrammetry Society and Blackwell Publishing,
- “Journal of Cultural Heritage” - Elsevier
- “Rendiconti Lincei” - Springer
- “Remote Sensing” — Open Access Journal

## TEACHING ACTIVITIES

### LECTURES

**2015 – 2016:** Lecturer at the course: “LABORATORIO DI PROGETTAZIONE ARCHITETTONICA 1 - 096357 - TECNICHE DELLA RAPPRESENTAZIONE” Arc.I - SOC (1 liv.)(ord. 270) - MI (1094) PROGETTAZIONE DELL'ARCHITETTURA

Lecturer at the course: “LABORATORIO DI PROGETTAZIONE ARCHITETTONICA 2 - TOPOGRAFIA E RILEVAMENTO” Arc.I - SOC (1 liv.)(ord. 270) - MI (1094) PROGETTAZIONE DELL'ARCHITETTURA

**2014 – 2015:** Lecturer at the course: “RAPPRESENTAZIONE E FOTOGRAMMETRIA - ELEMENTI DI TOPOGRAFIA E PRINCIPI DI FOTOGRAMMETRIA” Arc.I - SOC (1 liv.)(ord. 270) - MI (1147) ARCHITETTURA E PRODUZIONE EDILIZIA

Lecturer at the course: “ARCHITECTURAL PRESERVATION STUDIO - SURVEY ADVANCED TECHNIQUES” Arc.I - SOC (Mag.)(ord. 270) - MI (1136) ARCHITETTURA

**2013 – 2014:** Lecturer at the course: "Tecniche di Rilevamento", Arc.I - SOC (1 liv.) (ord. 270) - MI (1150) ARCHITETTURA AMBIENTALE

Lecturer at the course: “Topografia” Arc.I - SOC (1 liv.) (ord. 270) - MI (1145) SCIENZE DELL'ARCHITETTURA

**2002 – 2004:** Teaching assistant of the lectures of Topography of prof. Cristiana Achille at the Faculty of Civil Architecture - Polytechnic of Milan.

Teaching assistant of the lectures of Topography of prof. Carlo Monti. Faculty of Civil Engineering – Polytechnic of Milan.

### THESIS ADVISOR

**Arch. Mara Fraticelli (2015)** Dal rilievo alla fruizione dei dati 3D: il villaggio di Ghesc

**Arch. Simone Teruggi (2015)** Virtual reality and cultural heritage: an Oculus Rift application for Milan's Cathedral

**Arch. Angelo Lagostina (2014)** Modellazione parametrica real based di oggetti architettonici complessi.

**Arch. Stefania Corda (2014)** BIM and heritage. Hypothesis regarding the re-use project of rural village.



- Arch. Francesco Brusegan (2013)**      Architetture complesse: rilievo automatico e modellazione
- Ing. Marco Nicola (2013)**      BIM per il restauro della guglia maggiore del Duomo di Milano e la messa in opera di nuove chiavi in titanio
- Ing. Miriam Bonetta (2011)**      Propagazione bidimensionale di un'onda di dam-break: simulazione numerica e sperimentazione di laboratorio

#### **INTERNSHIP ACADEMICAL TUTOR**

- Simone Teruggi (2015)**      Visualizzazione 3D di beni culturali – Indagine sui metodi di semplificazione di mesh
- Melissa Marcelli (2015)**      Rilievo e Modellazione 3D della struttura delle Falconature della Guglia Maggiore, Duomo di Milano
- Monica Genito (2015)**      Le Pareti del Tiburio della Guglia Maggiore, Duomo di Milano.
- Elena Pessina (2015)**      Internship at external architecture studio

#### **SUMMERSCHOOL AND MASTER**

- Since 2012 (4 editions)**      He is organizer, director and tutor (co-directors Arch. Cristiana Achille and Ken Marquardt president of Canova Association) of Lifelong Learning Course: "LABORATORY OF PLACES. The complex of Ghesc and surroundings. History, survey, evolution". Main topics of the school, arrived to the 4<sup>th</sup> edition, are 3D survey methodologies and modelling techniques. The course is supported by ICOMOS.
- Since 2012 (4 editions)**      He participated as senior tutor in the Italian Summer School "Rilievo e Modellazione 3D" Organization and scientific coordination: Fabio Remondino - FBK Trento Salvatore Barba - University of Salerno, Alfonso Santoriello - University of Salerno.
- Since 2014 (2 editions)**      He participated as senior tutor in the International CIPA Summer School Summer School "Cultural Heritage 3D Surveying and Modeling" in Paestum. Organization and scientific coordination: Fabio Remondino - FBK, Alfonso Santoriello - University of Salerno. The school organized within the activities of the Paestum project by FBK (Trento), gives the opportunity to scholars, PhD students, researchers and specialists in the surveying and heritage fields to deepen their knowledge and expertise with reality-based 3D modelling techniques.
- Since 2010 (6 editions)**      He organized and taught on LifeLong Learning Course: "Know to protect the archaeological site and the museum of the Roman ships of Lake Nemi". The course, held at Politecnico di Milano, offers a series of lectures and survey experiences at the archaeological site of the Diana sanctuary in Nemi.
- 2005**      Lecturer at the course: "Survey for CH" at the training course "Research technical specialist in the field of monitoring and diagnostics of Cultural Heritage". The training course is part of the SIDART Project Integrated System for Diagnostics of the ARTistic heritage "National Operational Programme (PON): Research, Technological Development and Higher Education".

- 2004** He gave practical and theoretical lectures during the seminar “Georeferenziazione del patrimonio monumentale della Lombardia” organized by Prof. C. Monti and Prof. R. Brumana as part of study and research activities on the definition of methodologies, rules and technical specifications for the Georeferencing of Cultural Heritage.
- 2003** He holds lessons of LongLife Learning Course “Geographical Information Systems (basic course)” on the topic “Setting up a GIS from digital mapping with the use of standard ARC / INFO and ARCVIEW”. The course was organized at the Laboratory of Surveying, Cartography numerical GIS Detection Section of the Department of Hydraulic Engineering, Environmental and Survey of the Polytechnic of Milan.

## **ASSOCIATIONS**

- Member of the National Scientific Committee CSN ICOMOS Italy - CIPA – Heritage Documentation.
- Member of AUTECA (Associazione Universitari di Topografia e Cartografia).

## **AWARDS**

### **2012 E H Thompson Award**

Awarded by Wiley-Blackwell & The Remote Sensing and Photogrammetry Society for the paper entitled “Surveying and modelling the Main Spire of Milan Cathedral using multiple data sources” in The Photogrammetric Record, Vol. 26 (136), pp. 462-487. ISSN: 0031868X, DOI: 10.1111/j.1477-9730.2011.00658.x - Scopus Cited 12.

### **2011 BEST PAPER AWARD**

For the paper “Integrated strategies for the modeling very large and complex architectures”. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives, Volume 38, Issue 5W16, 7 September 2012, Pages 105-112. 4th ISPRS International Workshop on 3D Virtual Reconstruction and Visualization of Complex Architectures, 3DARCH 2011; Trento; Italy; 2 March 2011 through 4 March 2011- ISSN: 1682-1750.

### **2010 BEST POSTER PAPER AWARD**

For the paper, “Multiple data source for survey and modeling of very complex architecture”. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives Volume 38, Issue PART 5, 2010, Pages 234-239. ISPRS Commission V Mid-Term Symposium on Close Range Image Measurement Techniques; Newcastle upon Tyne; United Kingdom; 21 June 2010 through 24 June 2010. ISSN: 15740846 - Scopus Cited 4

## **PATENTS**

He is co-holder of the patent proposal n° MI2014A002016 for BIM3DSG System.

## SCIENTIFIC PUBLICATIONS

- 2016** NOCERINO E., MENNA F., FASSI F., REMONDINO AND F., (2016) Underwater calibration of dome port pressure housings. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-3/W4, 127-134, doi:10.5194/isprsarchives-XL-3/W4-127-2016, 2016
- MENNA, F.; NOCERINO, E.; FASSI, F.; REMONDINO, F. (2016) Geometric and Optic Characterization of a Hemispherical Dome Port for Underwater Photogrammetry. *Sensors* 2016, 16, 48.
- 2015** FASSI F., ACHILLE C., Rilievo e modellazione real based della statua della Madonnina. (2015) Contributo sul libro "Madunina di Milano" di Saverio Carillo, La scuola di Pitagora editrice ISBN 978-88-6542-192-5
- GIAMPAOLA D., CARSANA V., ACHILLE C., ACKERMANN S., FASSI F., FREGONESE L., NOBILE A. (2015) 3D survey technologies applied to the archaeology for the new "Municipio" underground station in Naples. *Proceeding of 1st International Conference on Metrology for Archaeology*, Benevento, Italy, October 22-23, 2015, ISBN-15: 978-88-940453-3-8, pagg. 26-31
- FREGONESE L., ACHILLE C., ADAMI A., FASSI F., SPEZZONI A. AND TAFFURELLI L. (2015): BIM: An Integrated Model for Planned and Preventive Maintenance of Architectural Heritage. *Digital Heritage 2015 International Congress*.
- ADAMI A., BALLETTI C., FASSI F., FREGONESE L., GUERRA F., TAFFURELLI L., VERNIER P. (2015): The bust of Francesco II Gonzaga: from digital documentation to 3D printing, *ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci.*, II-5/W3, 9-15, doi:10.5194/isprsannals-II-5-W3-9-2015, 2015.
- FASSI F., ROSSI C., MANDELLI A. (2015): Emergency survey of remote and endangered archaeological sites. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-5/W4, 85-91, doi:10.5194/isprsarchives-XL-5-W4-85-2015, 2015.
- FASSI F., ACHILLE C., MANDELLI A., RECHICHI F., PARRI S. (2015): A new idea of BIM system for visualization, web sharing and using huge complex 3D models for facility management. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-5/W4, 359-366, doi: 10.5194/isprsarchives-XL-5-W4-359-2015, 2015.
- ACHILLE C., ADAMI A., CHIARINI S., CREMONESI S., FASSI F., FREGONESE L., TAFFURELLI L. (2015). UAV-Based Photogrammetry and Integrated Technologies for Architectural Applications—Methodological Strategies for the After-Quake Survey of Vertical Structures in Mantua (Italy). *Sensors*, 15(7), 15520–15539. <http://doi.org/10.3390/s150715520>
- BOLOGNESI C., ACHILLE C., FASSI F. (2015): Good practice: analysis of the vulnerability of the seven churches of Monza. *Proceedings of ISBP - 2015 1° International Symposium on Building Pathology*. Porto 24-27 March 2015, ISBN: 978-972-752-175-3.
- 2014** BOLOGNESI C., ACHILLE C., FASSI F. (2014): Buone prassi: analisi dello stato di vulnerabilità di sette chiese a Monza. Good practice: analysis of the vulnerability of the seven churches of Monza. Italian survey & international experience. *Atti del 36° convegno internazionale dei Docenti della Rappresentazione UID PARMA Italian Survey & International Experience*, 18-20 settembre 2014 pgg. 107-116, ISBN 978-88-492-2915-8
- CHIARINI S., CREMONESI S., FREGONESE L., FASSI F., TAFFURELLI L. (2014) A multi-range approach for Cultural Heritage survey: a case study in Mantua Unesco site, *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-5, 157-164, doi:10.5194/isprsarchives-XL-5-157-2014, 2014.

- 2013** FASSI F., FREGONESE L., ACKERMANN S., DETROIA V., (2013) COMPARISON BETWEEN LASER SCANNING AND AUTOMATED 3D MODELLING TECHNIQUES TO RECONSTRUCT COMPLEX AND EXTENSIVE CULTURAL HERITAGE AREAS, *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-5/W1, 73-80, doi:10.5194/isprsarchives-XL-5-W1-73-2013, 2013.
- 2012** FREGONESE L., ACHILLE C., FASSI F., MONTI C. (2012). Rilievo e modellazione "Time saving and low cost" per I Beni Culturali, *Bollettino della società italiano di Fotogrammetria e Topografia*, n°4 ISSN: 1721-971X.
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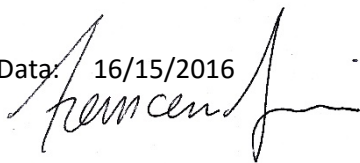
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Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196  
"Codice in materia di protezione dei dati personali".

Data: 16/15/2016

A handwritten signature in black ink, appearing to read "Francis", written over the date.