



POLITECNICO MILANO 1863

PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2022_PRO_DEIB_2 OF 29/06/2022 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 26/07/2022, n. 59 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 09/F2 - TELECOMMUNICATIONS - SDS ING-INF/03 TELECOMMUNICATIONS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ELECTRONICS, INFORMATION AND BIOENGINEERING (PROCEDURE CODE 2022_PRO_DEIB_2).

FINAL REPORT

The Selection Board, appointed with RD Index No. 9340 ref. No. 218411 of 23 September 2022, composed by the following Professors:

Prof. PATTAVINA Achille - Politecnico di Milano;
Prof. ELMIRGHANI Jaafar M.H. - University of Leeds, Regno Unito;
Prof. STAVDAS Alexandros - University of the Peloponnese,

met on November 29, 2022 at 10:10, for the first teleconference meeting.
Each board member was connected from his workstation.

At the start of the session the members of the Selection Board named the Chairman and the Secretary of the Selection Board:

PROF. ELMIRGHANI JAAFAR M.H, Kings College London, Chairman;
PROF. PATTAVINA ACHILLE, Politecnico di MILANO, Secretary.

Each member of the board declared not to have conjugal nor family relationship or other degree of kinship or affinity up to the fourth degree, not to be in same-sex civil union (as per art. 1 of Law No. 76 of 20.05.2016) and not to form a cohabiting couple (as per art. 1, paragraphs 37 et seq. of Law No. 76 of 20.05.2016) with the other members of this board and that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

The members of the Selection Board and the Secretary declared, pursuant to art. 35-bis of Legislative Decree 165/2001, not to have criminal convictions, even with non-definitive sentences, for offences provided for in Chapter I, Title II of the second book of the Criminal Code.

The Selection Board established the criteria and the parameters according to which the assessment was carried out, and set the minimum score below which the candidate shall not be included in the ranking of candidates.

On January 20, 2023 at 11:10, the Selection Board met for the second teleconference meeting, with each board member connected from his workstation, to inspect the list of applicants, who were:

- 1) Badia, Leonardo
- 2) Maier, Guido Alberto
- 3) Tornatore, Massimo
- 4) Verticale, Giacomo

Each member of the board declared not to have conjugal nor family relationship or other degree of kinship or affinity up to the fourth degree, not to be in same-sex civil union (as per art. 1 of Law No. 76 of 20.05.2016) and not to form a cohabiting couple (as per art. 1, paragraphs 37 et seq. of Law No. 76 of 20.05.2016) with the candidates and stated that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

Pursuant to the examination and after adequate evaluation, the Selection Board assigned a score to each of the established criteria and a judgment to each publication submitted by the candidate; furthermore, the board evaluated the knowledge of the English language.

Therefore the board, considering the sum of the scores given, expressed a collective judgment in relation to the quantity and the quality of publications, evaluating the overall productivity of the applicant, also with regard to his/her period of activity.

The above-mentioned judgments are attached to this report and they are an integral part of it (Attachment No. 1 to this final report).

The Selection Board drew up, according to the majority of its members, a ranking of candidates selected to carry out the scientific/teaching functions for which the selection was called, in a number equal to a maximum of five times the number of positions available in the competition (Attachment No. 2 to this final report).

THE SELECTION BOARD

Prof. ELMIRGHANI Jaafar M.H. (Chairman)



Prof. STAVDAS Alexandros (Member)



Prof. PATTAVINA Achille (Secretary)



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ATTACHMENT No. 1 to the FINAL REPORT

CANDIDATE: Badia Leonardo

CURRICULUM:

Professor Leonardo Badia started his research activity after receiving his PhD degree in 2004 at University of Ferrara and also at IMT Institute for Advanced Studies in Lucca. Since 2015 he has been Associate professor at the University of Padova. He has carried research activities mainly in the area of wireless networks with reference to the lower layers of the internet protocol architecture. He has performed a significant editorial activity as editor for many journals and also in favor of many international conferences, including the role of Technical Program Chair. He is author/coauthor of 41 papers published in international journals, the majority of which appeared in top-rated international journals, beyond about 140 papers published in international conferences. He has been coauthor of 2 teaching books with exercises for undergraduate/graduate courses and also of 4 chapters on research issues in edited books.

SUBMITTED PUBLICATIONS:

The submitted publications were evaluated considering the international excellence of the place of publication, the scientific contribution taking into account the paper/letter type of publication, the individual role as inferred from the number of authors and the position in the author's list, the impact in terms of citations taking into account the number of years passed since the publication (not always assessable for very recent publications). The scale considered is in order descending order of merit: excellent, very good, good, fair, sufficient, not sufficient.

Publ. n.	Type/Title of Publication	Judgment
1	L. Badia Impact of Transmission Cost on Age of Information at Nash Equilibrium in Slotted ALOHA <i>IEEE Networking letters</i> 2022	Publication venue: Good Scientific contribution: Very good Individual contribution: Excellent Impact: Not assessable
2	M. Rossi, L. Badia, M. Zorzi On the Delay Statistics of SR ARQ over Markov Channels with Finite Round-Trip Delay <i>IEEE Transactions on Wireless Communications</i> 2005	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Good
3	L. Badia, M. Rossi, M. Zorzi SR ARQ Packet Delay Statistics on Markov Channels in the Presence of Variable Arrival Rate <i>IEEE Transactions on Wireless Communications</i> 2006	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Excellent Impact: Very good
4	L. Badia, A. Erta, L. Lenzini, M. Zorzi A General Interference-Aware Framework for Joint Routing and Link Scheduling in Wireless Mesh Networks	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Excellent

	<i>IEEE Networks 2008</i>	Impact: Good
5	L. Badia, M. Levorato, M Zorzi Markov Analysis of Selective Repeat Type II Hybrid ARQ Using Block Codes <i>IEEE Transactions on Communications 2008</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Excellent Impact: Very good
6	L. Badia, S. Merlin, M. Zorzi Resource Management in IEEE 802.11 Multiple Access Networks with Price-based Service Provisioning <i>IEEE Transactions on Wireless Communications 2008</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Excellent Impact: Sufficient
7	L. Badia On the Impact of Correlated Arrivals and Errors on ARQ Delay Terms <i>IEEE Transactions on Communications 2009</i>	Publication venue: Very good Scientific contribution: Very good Individual contribution: Excellent Impact: Fair
8	L. Badia, M. Levorato, M. Zorzi A Channel Representation Method for the Study of Hybrid Retransmission-Based Error Control <i>IEEE Transactions on Communications 2009</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Excellent Impact: Sufficient
9	L. Badia, N. Baldo, M. Levorato, M. Zorzi A Markov Framework for Error Control Techniques Based on Selective Retransmission in Video Transmission over Wireless Channels <i>IEEE Journal on Selected Areas in Communcations 2010</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Excellent Impact: Very good
10	G. Quer, F. Librino, L. Canzian, L. Badia, M. Zorzi Inter-Network Cooperation exploiting Game Theory and Bayesian Networks <i>IEEE Transactions on Communications 2013</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Good
11	L. Badia A Markov Analysis of Selective Repeat ARQ with Variable Round Trip Time <i>IEEE Communication Letters 2013</i>	Publication venue: Good Scientific contribution: Very good Individual contribution: Excellent Impact: Sufficient
12	E. Jorswieck, L. Badia, T. Fahldieck, E. Karipidis, J. Luo Spectrum Sharing Improves the Network Efficiency for Cellular Operators <i>IEEE Communication Magazine 2014</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Good Impact: Excellent
13	N. Michelusi, L. Badia, M. Zorzi Optimal transmission policies for Energy Harvesting Devices with Limited State-of-Charge Knowledge <i>IEEE Transactions on Communications 2014</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Very good
14	M. Lopez-Martinez, J.J. Alcaraz, L. Badia, M. Zorzi, A Superprocess with Upper Confidence Bounds for Cooperative Spectrum Sharing <i>IEEE Transactions on Mobile Computing 2016</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Sufficient
15	L. Badia, F. Gringoli A Game of One/Two Strategic Friendly Jammers versus a Malicious Strategic Node <i>IEEE Networking letters 2019</i>	Publication venue: Good Scientific contribution: Very good Individual contribution: Excellent Impact: Sufficient
16	E. Gindullina, L. Badia, D. Gundoz Age-of-Information With Information Source Diversity in an Energy Harvesting System <i>IEEE Transactions on Green Communications and Networking 2021</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Very good

Overall collective judgement




QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The scientific production of Professor Badia is of good level and the publication venues of its papers include some of the best rated venues. The number of journal publications and of bibliometric indices are reasonable compared to his academic age. He received the best paper award for 6 papers presented at international conferences. The papers presented for evaluation include a remarkable number of single-author papers or papers with his name as first author, testifying his individual contribution to the papers, and are characterized by a good average number of citations.

TEACHING ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

The teaching activity by Professor Badia has been very intense: it started in 2002 with Bachelor classes at university of Ferrara and Padova and was extended in 2011 it to Master students in the area of telecommunications at University of Padova. He also taught programming languages classes for Bachelor classes at University of Ferrara. The teaching activity regarded also advanced topics addressed to PhD students both in Italy, that is in Lucca and Padova, and abroad, that is at University of Cartagena, Spain. Particularly remarkable is his activity in planning the curriculum of Master of Science in Telecommunication at University of Padova. He has been advisor of a 6 PhD students in Italy.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

Professor Badia has been active in many research projects funded both by European public agencies, such as the European Commission, and by Italian bodies, such as the Ministry or the University. He has been principal investigator (PI) in two projects sponsored either by the local Regional government or by the local University Department, but no information is provided regarding the possible funding of these projects.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Extensive scholarly production in English and intensive teaching activities in English testify to the candidate's good knowledge of the English language

CANDIDATE: Maier Guido Alberto

CURRICULUM:

Professor Guido Maier began his research activity at CORECOM in 1995, where he became responsible for the Optical networking Laboratory. He received the PhD degree in 2000 and in 2006 he joined Politecnico di Milano as Assistant professor, becoming Associate Professor in 2015. His research activity was developed in the broad area of communication networks with special emphasis on the lower layers of the Internet protocol architecture. He has been co-founder of the PoliMi spin-off SWAN Networks in 2016. He has been very active in the organization of IEEE international conferences, becoming General Chair and Technical Program Chair of various international conferences, including DRCN and NetSoft. He acted also as guest editor of special issues in different international journals. He has been author/coauthor of 47 papers published in international journals, the half of which appeared in top-rated international journals, beyond about 100 papers published in international conferences. He has been coauthor of 9 chapters on research issues in edited books.

SUBMITTED PUBLICATIONS:

The submitted publications were evaluated considering the international excellence of the place of publication, the scientific contribution taking into account the paper/letter type of publication, the individual role as inferred from the number of authors and the position in the author's list, the impact in terms of citations taking into account the number of years passed since the publication (not always assessable for very recent publications). The scale considered is in order descending order of merit: excellent, very good, good, fair, sufficient, not sufficient.



Publ. n.	Type/Title of Publication	Judgment
1	S. Troia, M. Mazzara, M. Savi, L.M. Moreira Zorello, G. Maier Resilience of Delay-sensitive Services with Transport-layer Monitoring in SD-WAN <i>IEEE Transactions on Network and Service Management 2022</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Not assessible
2	L.M. Moreira Zorello, L. Bliiek, S. Troia, T. Guns, S. Verwer, G. Maier Baseband-Function Placement with Multi-Task Traffic Prediction for 5G Radio Access Networks <i>IEEE Transactions on Network and Service Management 2022</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Not assessible
3	L.M. Moreira Zorello, M. Sodano, S. Troia, G. Maier Power-Efficient Baseband-Function Placement in latency-Constrained 5G Metro Access <i>IEEE Transactions on Green Communications and Networking 2022</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Not assessible
4	S. Troia, A.F.R. Vanegas, L.M. Moreira Zorello, G. Maier Admission Control and Virtual Network Embedding n 5G Networks: A Deep Reinforcement-Learning Approach <i>IEEE Access 2022</i>	Publication venue: Good Scientific contribution: Excellent Individual contribution: Very good Impact: Not assessible
5	S. Troia, A. Cibari, R. Alvizu, G. Maier Dynamic programming of network slices in software-defined metro-core optical networks <i>Elsevier Optical Switching and Networking 2020</i>	Publication venue: Fair Scientific contribution: Excellent Individual contribution: Very good Impact: Fair
6	T. Ye, J. Ding, T.T. Lee, G. Maier AWG-Based Nonblocking Shuffle-Exchange Networks <i>IEEE/ACM Transactions on Networking 2020</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Fair
7	S. Troia, F. Sapienza, L. Varé, G. Maier On Deep Reinforcement Learning for Traffic Engineering in SD- WAN <i>IEEE Journal on Selected Areas in Communications 2020</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Very good Impact: Good
8	I. Martín et al. Machine Learning-Based Routing and Wavelength Assignment in Software-Defined Optical etworks <i>IEEE Transactions on Network and Service Management 2019</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Fair Impact: Good
9	U. Paul, J. Liu, S. Troia, O. Falowo, G. Maier Traffic-profile and machine learning based regional data center design and operation for 5G network <i>Journal of Communications and Networks 2019</i>	Publication venue: Fair Scientific contribution: Excellent Individual contribution: Good Impact: Fair
10	S. Troia, R. Alvizu, G. Maier Reinforcement Learning for Service Function Chain Reconfiguration in NFV-SDN Metro-Core Optical Networks <i>IEEE Access 2019</i>	Publication venue: Good Scientific contribution: Excellent Individual contribution: Very good Impact: Good
11	R. Alvizu, S. Troia, G. Maier, A. Pattavina Matheuristic with machine-learning-based prediction for software-defined mobile metro-core networks <i>IEEE/OSA Journal of Optical Communications and Networking 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Very good
12	A.S. Muqaddas, P. Giaccone, A. Bianco, G. Maier Inter-Controller Traffic to Support Consistency in ONOS Clusters <i>IEEE Transactions on Network and Service Management 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Good

13	R. Alvizu, X. Zhao, G. Maier, Y. Xu, A. Pattavina Energy Efficient Dynamic Optical Routing for Mobile Metro-Core Networks Under Tidal Traffic Patterns <i>IEEE/OSA Journal of Lightwave Technology 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Fair
14	R. Alvizu et al. Comprehensive Survey on T-SDN: Software-Defined Networking for Transport Networks <i>IEEE Communications Surveys & Tutorials 2017</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Good Impact: Very good
15	D. Andreatti, S. Troia, F. Musumeci, S. Giordano, G. Maier, M. Tornatore Network Traffic Prediction based on Diffusion Convolutional Recurrent Neural Networks <i>IEEE INFOCOM 2019</i>	Publication venue: Good Scientific contribution: Very good Individual contribution: Good Impact: Very good
16	S. Troia et al. Machine-Learning-Assisted Routing in SDN-Based Optical Networks <i>European Conference on Optical Communication 2018</i>	Publication venue: Fair Scientific contribution: Good Individual contribution: Fair Impact: Good

Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The scientific production of Professor Maier is of good level and the publication venues of its papers include some of the best rated venues, both for journals and for conference papers. Very remarkable is his technology transfer activity, started at CORECOM and continued at Politecnico di Milano. This gave rise to the release of 6 patents in which Professor Maier is coinventor. This technology transfer activity was continued through the spin-off SWAN Networks he cofounded, devoted to the development of innovative SDN-based solutions for dynamic enterprise networking. The number of journal publications and of bibliometric indices are reasonable compared to his academic age. The papers presented for evaluation are characterized by a good average number of citations and one of them has appeared in a top-rated IEEE journal, that is IEEE Communication Surveys and Tutorials.

TEACHING ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

The teaching activity by Professor Maier has been intense: it started in 2005 and regarded courses for both Bachelor classes and Master classes at Politecnico di Milano. He also was recipient of teaching assignments in other European universities, such as Poznan University of Technology, Poland, Université Pierre and Marie Curie, Paris. He has been advisor of 3 PhD students at Politecnico di Milano.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

Professor Maier has been active in many research projects funded both by European public agencies, such as the European Commission, and by Italian public/private corporations, such as the Ministry of Economic Development and Telecom Italia. He has been Principal Investigator (PI) for different projects funded by European Union and also by industrial partners for a total of about 400 k€.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Extensive scholarly production in English and intensive teaching activities in English testify to the candidate's good knowledge of the English language

CANDIDATE: Tornatore Massimo

CURRICULUM:

Professor Massimo Tornatore started his scientific career as a researcher in 2006 after receiving his PhD degree and carried out his activities both at Politecnico di Milano, Italy, and at University of California, Davis.




He has been Associate Professor in Italy since 2014, as well as adjunct Full professor at University of California, Davis, since 2013 and Visiting Associate Professor at University of Waterloo since 2017. He has carried research activities in many fields within the wide area of communication networks and Internet. He has performed an intense editorial activity as editorial board member for many journals and as guest editor for special issues of IEEE journals, beyond a strong and significant contributions to many international conferences. He has been author/coauthor of more than 180 papers published in international journals, the majority of which appeared in top-rated international journals, beyond about 250 papers published in international conferences, including top-rated ones. He has been coauthor of 2 books, of 8 chapters on research issues in edited books and also coinventor of one patent.

SUBMITTED PUBLICATIONS:

The submitted publications were evaluated considering the international excellence of the place of publication, the scientific contribution taking into account the paper/letter type of publication, the individual role as inferred from the number of authors and the position in the author's list, the impact in terms of citations taking into account the number of years passed since the publication (not always assessable for very recent publications). The scale considered is in order descending order of merit: excellent, very good, good, fair, sufficient, not sufficient.

Publ. n.	Type/Title of Publication	Judgment
1	M. Tornatore, G. Maier, A. Pattavina WDM network optimization by ILP based on source formulation <i>Proceedings INFOCOM 2002</i>	Publication venue: Good Scientific contribution: Very good Individual contribution: Excellent Impact: Very good
2	M. Tornatore, G. Maier, A. Pattavina Availability design of optical transport networks <i>IEEE Journal on Selected Areas in Communications 2005</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Excellent Impact: Excellent
3	A. Nag, M. Tornatore, B. Mukherjee Optical network design with mixed line rates and multiple modulation formats <i>IEEE/OSA Journal of Lightwave Technology 2009</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
4	P. Chowdhury, M. Tornatore, S. Sarkar, B. Mukherjee Building a green wireless-optical broadband access network (WOBAN) <i>IEEE/OSA Journal of Lightwave Technology 2010</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
5	Y. Zhang, P. Chowdhury, M. Tornatore, B. Mukherjee Energy efficiency in telecom optical network <i>IEEE Communications Surveys & Tutorials 2010</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
6	M.F. Habib, M. Tornatore, M. De Leenheer, F. Dikbiyik, B. Mukherjee Design of disaster-resilient optical datacenter networks <i>IEEE/OSA Journal of Lightwave Technology</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Excellent
7	M.F. Habib, M. Tornatore, F. Dikbiyik, B. Mukherjee Disaster survivability in optical communication networks <i>Computer Communications 2013</i>	Publication venue: Fair Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
8	F. Dikbiyik, M. Tornatore, B. Mukherjee Minimizing the risk from disaster failures in optical backbone networks <i>IEEE/OSA Journal of Lightwave Technology 2014</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
9	M. Savi, M. Tornatore, G. Verticale	Publication venue: Fair Scientific contribution: Good




	Impact of processing costs on service chain placement in network functions virtualization <i>IEEE Conference on Network Function Virtualization and Software Defined Network 2015</i>	Individual contribution: Very good Impact: Very good
10	M. Tornatore, C. Rottondi, R. Goscien, K. Walkowiak, G. Rizzelli, A. Morea On the Complexity of Routing and Spectrum Assignment in Flexible-Grid Ring Networks <i>IEEE/OSA Journal of Optical Communications and Networking 2015</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Excellent Impact: Good
11	C. Colman-Meixner, C. Develder, M. Tornatore, B. Mukherjee A survey on resiliency techniques in cloud computing infrastructures and applications <i>IEEE Communications Surveys & Tutorials 2016</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
12	D. Chitimalla, K. Kondepu, L. Valcarenghi, M. Tornatore, B. Mukherjee 5G fronthaul–latency and jitter studies of CPRI over Ethernet <i>IEEE/OSA Journal of Optical Communications and Networking 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Excellent
13	C. Rottondi, L. Barletta, A. Giusti, M. Tornatore Machine-learning method for quality of transmission prediction of unestablished lightpaths <i>IEEE/OSA Journal of Optical Communications and Networking 2018</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Excellent
14	F. Musumeci, C. Rottondi, A. Nag, I. Macaluso, D. Zibar, M. Ruffini, M. Tornatore An overview on application of machine learning techniques in optical networks <i>IEEE Communications Surveys & Tutorials 2019</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Good Impact: Excellent
15	F. Musumeci, V. Ionata, F. Paolucci, F. Cugini, M. Tornatore Machine-learning-assisted DDoS attack detection with P4 language <i>IEEE International Conference on Communications 2020</i>	Publication venue: Fair Scientific contribution: Good Individual contribution: Good Impact: Good
16	H. Yang, Z. Xiong, J. Zhao, D. Niyato, Q. Wu, H.V. Poor, M. Tornatore Intelligent reflecting surface assisted anti-jamming communications: A fast reinforcement learning approach <i>IEEE Transactions on Wireless Communications 2021</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Excellent

Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The scientific production of Professor Tornatore is very extensive and the level of scientific contributions developed is excellent; it is characterized by an extremely careful selection of publication venues, which are for the vast majority conferences and journals of excellent quality, among the best and most selective internationally. The excellence is also testified by the 19 best paper awards received for papers presented in international conferences, beyond other awards for his scientific activity for the international community. The number of journal publications and of bibliometric indices are very high compared to his academic age. Almost all the journal papers presented for evaluation are characterized by a very high average number of citations and three of them have appeared in a top-rated IEEE journal, that is IEEE Communication Surveys and Tutorials.




TEACHING ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

The teaching activity by Professor Massimo Tornatore has been intense: it started in 2011 and was developed through courses delivered to both Bachelor classes and Master classes at Politecnico di Milano. A small part of his teaching activity was carried out also at university of California, Davis, in courses for Master students. He has been advisor of a remarkable number of PhD students, that is 10 PhD students in Italy and 6 PhD students in US.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

Professor Tornatore has been very active in promoting international research projects in cooperation with numerous international research institutions, especially with research proposals submitted to US agencies, such as National Science Foundation (NSF), Department of Defense (DoD), Department of Energy (DoE), as well as to EU Agencies, especially the European commission, and also to Italian government bodies. He has been Principal Investigator (PI) in many projects funded by industrial partners (SIAE Microelectronics, Hawei) and also by US agencies (NSF) for a total of about 1.2 M€.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Extensive scholarly production in English and intensive teaching activities in English testify to the candidate's good knowledge of the English language

CANDIDATE: Verticale Giacomo


CURRICULUM:

Professor Giacomo Verticale started his research activity after receiving his PhD degree in 2003 at Politecnico di Milano where he became Associate Professor in 2019. His research activity was developed in the broad area of communication networks with special emphasis on the higher layers of the Internet protocol architecture. He has been very active in the organization of IEEE international conferences, becoming also Technical Program Chair of two international conferences/symposia. He acted also as guest editor of special issues in one international journal. He has been author/coauthor of 47 papers published in international journals, the half of which appeared in top-rated journals, beyond about 60 papers published in international conferences. He has been coauthor of 2 chapters on research issues in edited books.

SUBMITTED PUBLICATIONS:

The submitted publications were evaluated considering the international excellence of the place of publication, the scientific contribution taking into account the paper/letter type of publication, the individual role as inferred from the number of authors and the position in the author's list, the impact in terms of citations taking into account the number of years passed since the publication (not always assessable for very recent publications). The scale considered is in order descending order of merit: excellent, very good, good, fair, sufficient, not sufficient.

Publ. n.	Type/Title of Publication	Judgment
1	D. Moro, G. Verticale, A. Capone Network Function Decomposition and Offloading on Heterogeneous Networks With Programmable Data Planes <i>IEEE Open Journal of the Communications Society 2021</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Not assessable
2	M. Savi, M. Tornatore, G. Verticale Impact of Processing-Resource Sharing on the Placement of Chained Virtual Network Functions <i>IEEE Transactions on Cloud Computing 2021</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Very good
3	D. Andreoletti, T. Velichkova, G. Verticale, M. Tornatore, S. Giordano A Privacy-Preserving Reinforcement Learning Algorithm for Multi-Domain Virtual Network Embedding	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Fair



	<i>IEEE Transactions on Network and Service Management 2020</i>	
4	M. Zambianco, G. Verticale Interference Minimization in 5G Physical-Layer Network Slicing <i>IEEE Transactions on Communications 2020</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Good
5	A. Erreygers, C. Rottondi, G. Verticale, J. De Bock Imprecise markov models for scalable and robust performance evaluation of flexi-grid spectrum allocation policies <i>IEEE Transactions on Communications 2018</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Sufficient
6	C. Rottondi, A. Barbato, L. Chen, G. Verticale Enabling privacy in a distributed game-theoretical scheduling system for domestic appliances <i>IEEE Transactions on Smart Grid 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Good
7	G. Mauri, M. Gerla, F. Bruno, M. Cesana, G. Verticale Optimal content prefetching in ndn vehicle-to-infrastructure scenari <i>IEEE Transactions on Vehicular Technology 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Good Impact: Very good
8	A. Piti, G. Verticale, C. Rottondi, A. Capone, L. Lo Schiavo The Role of Smart Meters in Enabling Real-Time Energy Services for Households: The Italian Case. <i>Energies 2017</i>	Publication venue: Fair Scientific contribution: Excellent Individual contribution: Good Impact: Very good
9	C. Rottondi, G. Verticale A Privacy-Friendly Gaming Framework in Smart Electricity and Water Grids <i>IEEE Access 2017</i>	Publication venue: Good Scientific contribution: Excellent Individual contribution: Very good Impact: Good
10	G. Mauri, G. Verticale Up-to-date key retrieval for information centric networking <i>Computer Networks 2017</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Sufficient
11	C. Rottondi, M. Buccoli, M. Zanoni, D. Garao, G. Verticale, A. Sarti Feature-Based Analysis of the Effects of Packet Delay on Networked Musical Interactions <i>J. Audio Eng. Soc. 2015</i>	Publication venue: Sufficient Scientific contribution: Excellent Individual contribution: Good Impact: Fair
12	M. Savi, C. Rottondi, G. Verticale Evaluation of the precision-privacy tradeoff of data perturbation for smart metering <i>IEEE Transactions on Smart Grid 2015</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Good
13	C. Rottondi, G. Neglia, G. Verticale Complexity analysis of optimal recharge scheduling for electric vehicles <i>IEEE Transactions on Vehicular Technology 2016</i>	Publication venue: Very good Scientific contribution: Excellent Individual contribution: Very good Impact: Sufficient
14	C. Rottondi, G. Verticale Privacy-friendly load scheduling of deferrable and interruptible domestic appliances in smart grids <i>Computer Communications 2015</i>	Publication venue: Fair Scientific contribution: Excellent Individual contribution: Very good Impact: Fair
15	C. Rottondi, G. Verticale, C. Krauss Distributed privacy-preserving aggregation of metering data in smart grids <i>IEEE Journal on Selected Areas in Communications 2013</i>	Publication venue: Excellent Scientific contribution: Excellent Individual contribution: Very good Impact: Very good
16	C. Rottondi, G. Verticale, A. Capone	Publication venue: Very good Scientific contribution: Excellent

Clay

Johanna

Privacy-preserving smart metering with multiple data consumers <i>Computer networks 2013</i>	Individual contribution: Very good Impact: Very good
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Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The scientific production of Professor Verticale is of fair level and the publication venues of its papers include some of the best rated venues. The number of journal publications and of bibliometric indices are limited compared to his academic age. He received the best paper award for 3 papers presented at international conferences. The papers presented for evaluation are characterized by a good average number of citations.

TEACHING ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

The teaching activity by Professor Verticale has been intense: it started in 2004 and regarded courses for both Bachelor classes and Master classes at Politecnico di Milano. He also was recipient of teaching assignments in international universities, such as Tongji University, Shanghai, and also in other Italian universities. He has been advisor of 4 PhD students at Politecnico di Milano.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

Professor Verticale has been active in many research projects funded both by European public agencies, such as the European Commission, and by Italian private corporations/foundations, such as telecom companies and content delivery operators. He has been Principal Investigator (PI) for different projects funded by European Union or Italian government bodies and also by industrial partners for a total of about 400 k€.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Extensive scholarly production in English and intensive teaching activities in English testify to the candidate's good knowledge of the English language.

Based on the above judgements the following numerical evaluations are assigned to the candidates

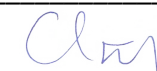
CRITERIA	Quality of scientific and/or project production, assessed on the basis of criteria and parameters recognized by the international scientific community of reference	Teaching activity at the university level in Italy or abroad	Scientific responsibility for funded research projects	Total
Badia Leonardo	54	18	0	72
Maier Guido Alberto	49	15	10	74
Tornatore Massimo	60	16	19	95
Verticale Giacomo	45	15	10	70

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Prof. STAVDAS Alexandros (Member)



Prof. PATAVINA Achille (Secretary)



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PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2022_PRO_DEIB_2 OF 29/06/2022 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 26/07/2022, n. 59 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 09/F2 - TELECOMMUNICATIONS - SDS ING-INF/03 TELECOMMUNICATIONS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ELECTRONICS, INFORMATION AND BIOENGINEERING (PROCEDURE CODE 2022_PRO_DEIB_2).

ATTACHMENT No. 2 to the FINAL REPORT

MERIT RANKING

SURNAME AND NAME	Overall score
Tornatore Massimo	95
Maier Guido Alberto	74
Badia Leonardo	72
Verticale Giacomo	70

Milan, January 20. 2023

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