FINAL REPORT

The Judging Panel, appointed with RD Index No. 5460 Ref. No. 83805 of September 19th 2017, composed by the following Professors:

Prof. Giovanni MORONI
 Prof. Horst TEMPELMEIER
 Prof. Xiaolan XIE
 Politecnico di Milano;
 Universität zu Köln;
 Mines Saint-Étienne.

met on Monday, October 23rd, at 04:00 pm, for the first teleconference meeting. Each Judging Panel member was connected from his workstation.

At the start of the session the members of the Judging Panel named the Chairman and the Secretary of the Judging Panel:

- Prof. Horst TEMPELMEIER, full professor at the Universität zu Köln, Chairman;
- Prof. Giovanni MORONI, full professor at the 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 Judging Panel also 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 Judging Panel fixed the criteria and the parameters according to which the assessment was carried out, and established the minimum score below which the candidate shall not be included on the ranking of candidates. The above-mentioned evaluation criteria are attached to this report and they are an integral part of it (Attachment No. 1 to this Final Report).

On Tuesday, November 28th, at 02:00 pm, the Judging Panel met for the second teleconference meeting. Each member was connected from his workstation. The Judging Panel inspected the list of applicants, who were:

MATTA Andrea.

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 Judging Panel assigned a score to each of the established criteria and a judgment to each publication submitted by the candidate; furthermore, the Judging Panel evaluated the knowledge of the foreign language.

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Therefore, the Judging Panel, 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 period of activity. The above-mentioned judgments are attached to this report and they are an integral part of it (Attachment No. 2 to this Final Report).

The Judging Panel 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. 3 to this Final Report).

THE JUDGING PANEL

Prof. Horst TEMPELMEIER (Chairman)

Prof. Xiaolan XIE (Member)

ATTACHMENT No. 1 to FINAL REPORT (EVALUATION CRITERIA)

The Judging Panel will assess candidates admitted for selection on the basis of:

- · Curriculum;
- Scientific publications;
- Teaching experience.

The assessment will take into consideration the following criteria:

- a) Quality of scientific production, assessed on the basis of criteria and parameters recognised by the international scientific community of reference;
- b) Teaching experience in Italian or foreign Universities or bodies;
- c) Scientific responsibility for funded (government and industrial) research projects;
- d) Consistency with the required profile;
- e) Scientific leadership and international visibility.

Method of evaluation of the foreign language (English) knowledge level: The level of proficiency of the candidate shall be considered adequate if either the candidate has submitted any adequate certification, or the candidate has been visiting researcher in a foreign university (preferred in an English language country), or the candidate has been member in an international journal/conference scientific/editorial committee, or the candidate has been active member in an international scientific academy/association, or the candidate has been active in international research projects, or any similar experience can be assessed through the analysis of the documents and publications submitted by the candidate.

The grading of the candidates will be based on a numerical scale. The Judging Panel will assign:

- 1) A maximum of 30/100 points to item a);
- A maximum of 20/100 points to item b);
- A maximum of 10/100 points to item c);
- 4) A maximum of 30/100 points to item d);
- 5) A maximum of 10/100 points to item e).

The minimum score below which the candidate shall not be included in the ranking of candidates is 60/100 points.

THE JUDGING PANEL

Prof. Horst TEMPELMEIER (Chairman)

Prof. Xiaolan XIE (Member)

ATTACHMENT No. 2 to FINAL REPORT (Overall Collective Judgment)

CRITERIA	Quality of scientific production (Maximum 30/100)	Teaching experience in Italian or foreign Universities or bodies (Maximum 20/100)	Scientific responsibility for funded research projects (Maximum 10/100)	Consistency with the requested profile (Maximum 30/100)	Scientific leadership and international visibility (Maximum 10/100)	Total
MATTA Andrea	30/100	19/100	09/100	30/100	10/100	98/100

CANDIDATE: MATTA Andrea

CURRICULUM

Andrea Matta is an Associate Professor at the Department of Mechanical Engineering of Politecnico di Milano (Italy), where he received in 1997 his Master of Science in Management and Industrial Engineering. After being temporary researcher at Politecnico di Milano, Department of Mechanical Engineering, and 6-month visiting researcher at the Laboratory Productique et Logistique of Ecole Centrale Paris (France), he became part of the Faculty of Politecnico di Milano as Assistant Professor (since June 2001, tenured in June 2004) and then as Associate Professor (since December 2010, tenured in December 2013) in Manufacturing Technology and Systems (Scientific disciplinary sector: ING-IND/16).

He was visiting professor at the Department of Industrial Engineering and Operations Research at University of California, Berkeley (USA) in 2007. From February 2014 to December 2016 he has been Distinguished Full Professor at the Department of Industrial Engineering and Management, School of Mechanical Engineering of Shanghai Jiao Tong University (P.R. of China), where currently he is Guest Professor.

He received the Shanghai One Thousand Talent Award (2013), the Eastern Scholar Award (2013), and the 2015 ME Internationalization Award for contributing to improve Internationalization of the School of Mechanical Engineering, Shanghai Jiao Tong University. Currently, he is president of the Association of Italian Scholars in China and delegate of the Rector of Politecnico di Milano for the strategic partnership with Shanghai Jiao Tong University.

He is editor in chief of Flexible Services and Manufacturing Journal, associate editor of IEEE Robotics and Automation Society Letters, and member of the Advisory Board of OR Spectrum. He is senior member of IEEE Robotics and Automation Society (RAS), where he is co-chair of the technical committee Sustainable Production Automation and member of the technical committees Automation in Health Care, and Industrial Automated Systems and Control. He is member of AITEM, Italian Association of Manufacturing, of INFORMS Institute for Operations Research and the Management Sciences, and of INFORMS Simulation (I-Sim). Since 2010 he is Scientific responsible of the Research Area 1 - Manufacturing Systems at MUSP - Laboratory for Machine Tools and Production Systems (www.musp.it) and member of the MUSP Scientific-Technical Committee.

His research area includes analysis, design and management of production and service systems. The main research themes are related to simulation-optimization of manufacturing systems, performance evaluation of stochastic manufacturing systems, resource planning and scheduling in home care systems, and energy saving in manufacturing. On these topics, he is/has been leading and contributing to different industrial, national, regional, and international research projects. He is author of 133 contributions, of which 53 have been published in peer reviewed international journals and books.

The candidate has obtained the Italian National Scientific Qualification as Full Professor for the Competition Sector 09/B1 "Manufacturing Technology and Systems" - SDS ING-IND/16 "Manufacturing Technology and Systems".

The Judging Panel, having analyzed in details the curriculum of Andrea Matta expresses unanimously an excellent judgment for the completeness and quality of the activities developed so far by the candidate.

TEACHING EXPERIENCE

Andrea Matta teaching activities have been mainly focused on typical subjects of the SDS ING-IND/16 "Manufacturing technology and Systems" since Academic Year 2001-02. At Politecnico di Milano, as an assistant professor, he taught an average of 9 ETCS per academic year, and as associate professor he has been teaching an average of 20 ECTS per academic year on Bachelor and Master of Science degree programmes in Mechanical Engineering and Management Engineering. In particular, he is / has been teaching Manufacturing, Computer Aided Manufacturing, Integrated Manufacturing Systems, and Reconfigurable Manufacturing Systems./

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At Tongji University, he experienced the teaching of Manufacturing (5 ECTS) for two years and Computer Aided Manufacturing (5 ECTS) for four years. At Shanghai Jiao Tong University, he taught Stochastic Models (6 ECTS) and System Modeling and Simulation (4 ECTS), both for three years.

The Judging Panel appreciates the relevant teaching activity carried out by the candidate, both in Italy and in P.R. of China, and expresses a very positive evaluation on the coherence between the teaching activity and the research activity carried out by the candidate. Therefore, the Judging Panel unanimously considers significant the teaching activity of the candidate, which qualify Andrea Matta as a highly experienced teacher.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS

Andrea Matta has been involved as project Principal Investigator or research unit Scientific Responsible in several research projects funded as a result of competitive evaluation including EU and P.R. of China projects, projects funded by Regions (Italy and France), and in several projects directly funded by industrial companies or no-profit organizations. All the projects are strictly related to his scientific interest and all of them are related to industrial or service applications of the research carried out by the candidate.

With respect to the research area of analysis, design and management of manufacturing systems he has been:

- Principal Investigator of one Chinese project and two Italian industrial projects;
- Research unit scientific responsible in three EU projects, one regional project and one industrial project.

With respect to the research area of analysis, design and management of service systems (home care systems) he has been:

- Principal Investigator of one Chinese project and two Italian projects with no-profit organizations;
- Research unit scientific responsible in one EU-region cooperation project, and one regional project.

The Judging Panel considers unanimously the scientific responsibility carried out so far of high level and well balanced between prestigious academic projects and relevant industrial applications, as testified by the scientific outcomes in terms of publications.

QUALITY OF SCIENTIFIC PRODUCTION

Publications Submitted by the Candidate

The candidate has submitted 20 publications reported in the following, all published in renowned international journals with referee. Considering the Scopus database to date, the publications presented have been cited 461 times and the relative H-index is equal to 12. On average, the publications have a number of authors in line with common scientific practice in the field and the Judging Panel has assumed the contribution of the candidate identical to the one of the other authors. The publications testify a strong cooperation with other national and international colleagues and with his team. All the publications presented are coherent with the profile requested by the public selection.

All the publications presented are considered by the Judging Panel as ranging between good and excellent quality according to the common criteria and parameters recognized in the scientific community. All the papers are based on sound and rigorous methodologies and present original and significant contributions to the field of Manufacturing Technology and Systems in the areas of stochastic models for the analysis, design and management of complex systems, like manufacturing and health care systems. In particular, the research activities have been dedicated to:

- the development of analytical methods for assessing the main performance measures of stochastic manufacturing systems;
- · the design and management of manufacturing systems with high degree of flexibility;
- the optimization of stochastic discrete event systems using simulation;
- the development of mathematical optimization models for the human resource planning in home health care services;
- the definition of energy-efficient control strategies for machine tools and machining parameters.

Consequently, the Judging Panel unanimously considers that the publications submitted by the candidate Andrea Matta appropriately qualify the candidate in the field of Manufacturing Technology and Systems.

No. of Publications	Type/Title of Publication	
1	Tolio T., Matta A. (1998) A method for performance evaluation of automated flow lines. CIRP ANNALS, vol. 47, pp. 373-376 ISSN: 0007-8506	
2	Matta A., Tolio T., Karaesmen F., Dallery Y. (2001) An integrated approach for the configuration of automated manufacturing systems. ROBOTICS AND COMPUTER-INTEGRATED MANUFACTURING, vol. 17, pp. 19-26 ISSN: 0736-5845	
3	Tolio T., Matta A., Gershwin S.B. (2002) Analysis of two-machine lines with multiple failure modes. IIE TRANSACTIONS, vol. 34, pp. 51-62 ISSN: 0740-817X	
4	Levantesi R., Matta A., Tolio T. (2003) Performance evaluation of continuous production lines with machines having different processing times and multiple failure modes. PERFORMANCE EVALUATION, vol. 51, pp. 247-268 ISSN: 0166-5316	
5	Matta A., Dallery Y., Di Mascolo M. (2005) Analysis of assembly systems controlled with Kanbans. EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 166, pp. 310-336 ISSN: 0377-2217	
6	Matta A., Tomasella M., Valente A. (2007) Impact of ramp-up on the optimal capacity-related reconfiguration policy. INTERNATIONAL JOURNAL OF FLEXIBLE MANUFACTURING SYSTEMS, vol. 19, pp. 173-194 ISSN: 0920-6299	
7	Matta A., Tomasella M., Clerici M., Sacconi S. (2008) Optimal reconfiguration policy to react to product changes. INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol. 46, pp. 2651-2673 ISSN: 0020-7543	
8	8 Colledani M., Gandola F., Matta A., Tolio T. (2008) Performance evaluation of linear and non linear multi-product multi-stage lines with unreliable machines and finite homogeneous buffers. IIE TRANSACTIONS, vol. 40, pp-612-626 ISSN: 0740-817X	

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No. of Publications	Type/Title of Publication	Evaluation
9	Lanzarone E., Matta A., Scaccabarozzi G. (2010) A patient stochastic model to support human resource planning in home care. PRODUCTION PLANNING AND CONTROL, vol. 21, pp. 3-25 ISSN: 0953-7287	
10	Alfieri A., Matta A. (2012) Mathematical programming representation of pull controlled single- product serial manufacturing systems. JOURNAL OF INTELLIGENT MANUFACTURING, vol. 23(1), pp. 23-35 ISSN: 0956-5515	
11	Alfieri A., Matta A. (2012) Mathematical programming formulations for approximate simulation of multistage production systems. EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 219(3), pp. 773-783 ISSN: 0377-2217	
12	Lanzarone E., Matta A., Sahin E. (2012) Operations management applied to home care services: The problem of assigning human resources to patients. IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS PART A: SYSTEMS AND HUMANS, vol. 42(6), pp. 1346-1363 ISSN: 1083-4427	
13	Alfieri A., Matta A. (2013) Mathematical programming time-based decomposition algorithm for discrete event simulation. EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol. 231(3), pp. 557-566 ISSN: 0377-2217	Good
14	Borgia S., Matta A., Tolio T. (2013) STEP-NC compliant approach for setup planning problem on multiple fixture pallets. JOURNAL OF MANUFCATURING SYSTEMS, vol. 32(4), pp. 781-791 ISSN: 0278-6125	
15	Assaf R., Colledani M., Matta A. (2014) Analytical evaluation of the output variability in production systems with general Markovian structure. OR SPECTRUM, vol. 36(3), pp. 799-835, ISSN: 0171-6468	
16	Frigerio N., Matta A. (2015) Energy-efficient control strategies for machine tools with stochastic arrivals, IEEE TRANSACTIONS ON AUTOMATION SCIENCE AND ENGINEERING, vol. 12(1), pp. 50-61, ISSN: 1545-5955	
17	Alfieri A., Matta A., Pedrielli G. (2015) Integrated simulation-optimisation of pull control systems. INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol. 53(14), pp. 4317-4336, ISSN: 0020-7543	
18	Frigerio N., Matta A. (2016) Analysis on energy-efficient switching of machine tool with stochastic arrivals and buffer information, IEEE TRANSACTIONS ON AUTOMATION SCIENCE AND ENGINEERING, vol. 13(1), pp. 238-246, ISSN: 1545-5955	
19	Yu C., Matta A. (2016) A statistical framework of data-driven bottleneck identification in manufacturing systems. INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol. 54(21), pp. 6317-6332, ISSN: 0020-7543	
20	Albertelli P., Keshari A., Matta A. (2016) Energy oriented multi cutting parameter optimization in face milling. INTERNATIONAL JOURNAL OF CLEANER PRODUCTION, vol. 137, pp. 1602-1618, ISSN: 0959-6526	Good

Overall Consistency of the Candidate's Scientific Production

The candidate has obtained the Italian National Scientific Qualification as Full Professor for the Competition Sector 09/B1 "Manufacturing Technology and Systems" - SDS ING-IND/16 "Manufacturing Technology and Systems".

The candidate has 133 publications, of which 53 have been published in peer reviewed international journals and books, and 67 in international refereed conferences proceedings. Considering the Scopus database to date, his overall scientific production has been cited 872 times and his H-index is equal to 17, far beyond the parameters required in the Italian National Scientific Qualification. In the last 5 years, the candidate produced 48 publications, of which 26 published in international referred journals.

All the publications are in line with the methodologies and topics of interest for the SDS ING-IND/16 "Manufacturing Technology and Systems" and concentrate in particular in the field of Manufacturing Systems Engineering.

The Judging Panel unanimously considers the overall scientific production of the candidate Andrea Matta of excellent quality and his productivity significant with respect to the scientific field.

SCIENTIFIC LEADERSHIP AND INTERNATIONAL VISIBILITY

Andrea Matta was 6-month visiting researcher at the Laboratory Productique et Logistique of Ecole Centrale Paris (France) and visiting professor at the Department of Industrial Engineering and Operations Research at University of California, Berkeley (USA) in 2007. From February 2014 to December 2016 he has been Distinguished Full Professor at the Department of Industrial Engineering and Management, School of Mechanical Engineering of Shanghai Jiao Tong University (P.R. of China), where currently he is Guest Professor.

He received the Shanghai One Thousand Talent Award (2013), the Eastern Scholar Award (2013), and the 2015 ME Internationalization Award for contributing to improve Internationalization of the School of Mechanical Engineering, Shanghai Jiao Tong University. Currently, he is president of the Association of Italian Scholars in China and delegate of the Rector of Politecnico di Milano for the strategic partnership with Shanghai Jiao Tong University.

He is editor in chief of Flexible Services and Manufacturing Journal, associate editor of IEEE Robotics and Automation Society Letters, and member of the Advisory Board of OR Spectrum. He is senior member of IEEE Robotics and Automation Society (RAS), where he is co-chair of the technical committee Sustainable Production Automation and member of the technical committees Automation in Health Care, and Industrial Automated Systems and Control.

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He is the founder of the International Conference on Health Care Systems Engineering (first edition held in Milano, Italy, on May 2013), and he is member of the Scientific Committee of the SMMO, Conference on Stochastic Models of Manufacturing and Service Operations.

The candidate gave one keynote talk, and 11 invited international seminars and presentations.

He was invited member of evaluation committee of 9 PhD defenses: 1 at Ecole Centrale Paris, 2 at National University of Singapore, 1 at Université Jean Monnet de Saint-Etienne, 2 at Ecole Nationale Supérieure des Mines de Saint Etienne, 1 at IIT Bombay, 1 at INSA de Lyon, and 1 at KU Leuven.

He has been advisor of 4 PhD students and more than 52 master students, 4 of them as co-supervisor with professors of foreign university. Currently he is advisor of 3 PhD students (one Italian and two Chinese).

Consequently, the Judging Panel unanimously considers outstanding both the visibility at international level and the leadership at scientific level of the candidate Andrea Matta.

CONSISTENCY WITH THE REQUESTED PROFILE

The Judging Panel, on the basis of the documentation presented by Andrea Matta, considers his research profile highly suitable for the Competition Sector 09/B1 "Manufacturing Technology and Systems" - SDS ING-IND/16 "Manufacturing Technology and Systems". In particular, the candidate has long term experience on combining knowledge of advanced methods in design and management of manufacturing systems with knowledge of manufacturing processes, thus enabling the research activities of the Manufacturing and Production Systems research line on the study of manufacturing systems by means of quantitative methodologies such as discrete event simulation, analytical methods based on Markovian models and queuing theory to support design, planning and control of manufacturing systems across several industrial applications, such as automotive, aerospace and machine tools and including emerging sustainability criteria. Therefore, the Judging Panel considers the candidate extremely suited to carry out research activities in the area of Manufacturing Systems Engineering.

Furthermore, the candidate has a great experience in teaching manufacturing subjects, typical of the SDS ING-IND/16 "Manufacturing Technology and Systems".

Therefore, the Judging Panel unanimously considers the candidate Andrea Matta perfectly consistent with the requested profile.

KNOWLEDGE OF THE ENGLISH LANGUAGE

Considering that:

- The candidate is Editor in Chief of Flexible Services and Manufacturing Journal, associate editor of IEEE Robotics and Automation Society Letters, and member of the Advisory Board of OR Spectrum;
- The candidate is senior member of IEEE Robotics and Automation Society (RAS), where he is co-chair of the technical committee
 Sustainable Production Automation and member of the technical committees Automation in Health Care, and Industrial Automated Systems and Control;
- The candidate was visiting professor at the Department of Industrial Engineering and Operations Research at University of California, Berkeley (USA);
- The candidate was Distinguished Full Professor at the Department of Industrial Engineering and Management, School of Mechanical Engineering of Shanghai Jiao Tong University (China);
- The candidate is Guest at the School of Mechanical Engineering of Shanghai Jiao Tong University (China);
- The candidate has been involved in international scientific projects, being principal investigator or scientific responsible;
- The candidate has experienced teaching in international programmes for three Academic Years;
- The candidate is co-author of 133 scientific contributions produced in English language.

And considering the CV and publications submitted by the candidate, the Judging Panel unanimously evaluates the proficiency of the English language of Andrea Matta "excellent" and declares that he fulfills all the requirements set forth by the public selection under analysis.

THE JUDGING PANEL

Prof. Horst TEMPELMEIER (Chairman)

Prof. Xiaolan XIE (Member)

ATTACHMENT No. 3 to FINAL REPORT

MERIT RANKING

SURNAME AND NAME	Overall score
MATTA Andrea	98/100

Milano, November 28th, 2017

THE JUDGING PANEL

Prof. Horst TEMPELMEIER (Chairman)

Prof. Xiaolan XIE (Member)