Certification of Project Managers Based on IPMA and PMI Models Through Conforming to ISO 17024:2003[1]

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The paper presents an analysis of the certification of project managers based on IPMA and PMI models, with special emphasis on their coconformity to the ISO 17024:2003 standard.

1. Introduction

An increasing number of companies finds that a significant portion of their business operations is conducted implementing the project approach, hence the importance of engaging professionals competent in this field. A specific discipline that comprises management of varied aspects of a project, regardless of whether it is implemented in economic or non-economic industry, is project management. The project management approach in business has been present for several years so far and according to [6] it is no longer considered to be merely an approach in planning and monitoring the execution of a project, but also a means to achieve strategic goals of a company in a business environment. Its importance is further highlighted by the fact that the first organizations in the world were established as early as the 1970s, to gather together the professionals from the field of project management and to contribute to the development of the field on both the national and the global levels, via numerous initiatives, meetings, knowledge and experience exchange.

Some world renowned organizations that did a lot in the field of project management development are the following: IPMA – *International Project Management Association*, PMI – *Project Management Institute*, APM – *Association for Project Management*. They went a step further by developing the sertification programs for project managers, intending to offer the individual managers an opportunity to verify their existing and newly acquired knowledge, affirm their competence as project managers and become engaged on the on-going and the future projects worldwide.

The project management organizations, both international and national ones, are conceived in such a manner that they welcome individuals and organizations that employ the project approach in their operations, organize congresses, symposia, meetings, on which oc-casions the participants will share and exchange their knowledge and experience. In the project managers certification programs, in which these organizations are also involved, individuals get an opportunity to affirm their competence in a certain segment of project management.

Given that projects today are actually large enterprises that are not executed on only one location, under the direct supervision of the project manager but are rather conducted from a distance, both temporal and geographical; that is, virtually, it will be an advantage if the project manager or a member of the team have a formal sertification of their competence. According to the SRPS ISO 10006:2007 standard, "project organization is to be supplied with complete staff" (item 5.2.4) since "the quality and performance of the project depend on the staff that participate in it" (item 6.2.1)

In this paper we will draw attention on a substantial activity in the field of organization and activities of the project organizations themselves, as well as on the organization and conduct of their programs for certification of project managers; this is the activity of making the organization and the certification programs comply with the requirements of relevant international standards. In case of this type of organizations these are primarily the ISO 9001:2008, Quality Management Systems – Requirements and ISO 17024:2003, Conformity Assessment – General requirements for bodies operating certification of staff.

2. Implementation of project management project

The implementation of project management concept allows for the company management to efficiently execute the projects that comply with its strategic goals. Managing the project execution, the manager deals with the key factors, manages the total time span re-

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quired to complete the project, the financial assets and other resources. All these factors have to be planned and controlled in order that the project should be completed efficiently. Managers are daily faced with various problems and obstacles; in order that they should do their job more efficiently and complete the projects within the planned time, with plannes costs and quality, the organizations are established to aid them.

Some of the organizations and areas that need to implement the project approach and engage project managers are as follows: construction firms, engineering and project organizations, ministries (project management units), marketing agencies, consulting firms, research organizations, etc. An important segment in each of these areas, calling for attention, is the project quality management. There are two aspects of its implementation, one dealing with the project processes, and the other, concerned with the project product. In case either of the aspects fails to be accomplished, it can affect the product of the project and its quality, the satisfaction of the project results users and of other stakeholders, as well as the project organization itself.

According to [9], achieving quality goals is the responsibility of the management, and demands committment to achieving the goals concerning quality that are set on each of the levels within the organizations involved in the project. The project manager combines his knowledge, skills, personal traits and attitudes to focus upon the project goals accomplishment. According to [1], his competence in this context is viewed as the ability to conduct the activities in the project that will lead to a desired result based on the standards adopted. As a discipline, project management is developing steadily and fast, it connects with other management disciplines producing new trends. The project management concept whose potentials of implementation are high and whose advantages are many, is a virtual project management. Projects are managed from a distance, either geographical or temporal, or both, the memebers are geographically dispersed and communicate via modern information and communication devices. The advantages of the virtual project management are the following: faster communications, hence a more efficient work of project teams, cost reduction in using space, travel, etc., and higher productivity at work. In forming such a team it is important that the selection of members be good; a further advantage is that the project manager or a team member has obtained a formal certification of his/her competence in the form of a valid, internationally recognized certificate.

3. Certification of project managers

In order that the organizations such as IPMA or PMI, or their accreditation bodies as national associations, should conduct their programs of project manager certification in an efficient manner, they undergo a process of adjusting their organization, the manner in which they work and the requirements themselves to the requirements of the relevant international standards on the basis of which the organizations can later be certified or can accredit their certification bodies. Simultaneously, the quality of the program is affirmed and a higher credibility is awarded to the holders of the certificates, together with a greater trust the organizations that employ them feel about the importance of the certificate.

According to [4], the organizations of this type certify the implemented system of quality management in the organization on the basis of ISO 9001:2008 Quality Management Systems – Requirements, whereas a certification body is accredited according to ISO 17024:2003 Conformity Assessment – General Requirements for certification bodies operating certification of staff. According to the classification of standards in the field of CASCO – on individual standards for conformity assessment, ISO 17024:2003 refers to bodies operating certification concerning staff. The standard was devised by the ISO/CASCO committe for conformity assessment, and developed by the Committee for standards in the field of quality management system KS A176. In this country, the standard is published as SRPS ISO/IEC 17024:2005 Conformity Assessment – General requirements for bodies operating certification of persons (ISO/IEC 17024:2003 – *Conformity Assessment – General requirements for bodies operating certification of persons*). As quoted in [4], ISO 9001:2008 and ISO 17024:2003 are compatible standards, where the implementation of their requirements enhances the quality of the certification program elements.

The certificate serves to confirm that the candidate has achieved a certain level of knowledge, experience and skill to perform his job, in accordance with the requirements of respective standards and the ethics of a given profession. Depending on the certification program, certificates are valid for a certain period of time (e.g., five years). Upon the expiry of this period, the program offers the project managers the opportunity to undergo a recertification procedure to extend the validity of their certificates, where they are expected to submit the documents proving that in the previous period they have implemented the acquired knowl-

edge, improved their knowledge, managed projects and that they desire to work and improve further in their respective fields.

The certification process proves to all parties that the candidate has achieved and that he/she further develops an acceptable level of professional knowledge, skills and competencies, where the certification body is the party that verifies the candidate's knowledge and achievement. The benefit of certification is assumed to be manifold. For the project personnel, it is an internationally recognized certificate of qualification and competence in project management; for the organizations providing the project management services it is the proof that their employees are professionally competent, whereas for the clients it is a higher confidence that they will get a quality service. Competence can also be viewed as an evident ability to implement knowledge and skills, while according to [2], the project manager's competence has three dimensions: knowledge, personality and performance.

4. IPMA association

International Project Management Association – IPMA is an international project management association seated in Zürich, established in 1965. IPMA includes more than 50 national project management associations worldwide, whose objectives are development, training, cooperation and promotion in the field of project management. One of its full members is YUPMA – Project Management Association of Serbia, which includes the certification body YUPMA Cert whose purpose is to establish, conduct, improve and maintain the project manager certification program in this country, on the basis of the IPMA model.

4.1. Certification system and basic documents

Over the years, IPMA has developed a leading world certification program and had an important role in improving and development of the project management field. As quoted in [5], the IPMA Council confirmed in Ljubljana, 14th June, 1998 that a four level IPMA certification system was established, previously approved of on 28th February the same year, on Bled. It is then that the certification bodies of the associations-members of IPMA commenced their certification programs. IPMA certifies project and program managers, awards successful project teams and individual and issues numerous publications in the fields of project management.

IPMA has developed a certification program where, in order to acquire the IPMA certificate, the candidates are expected to show a required level of knowledge, un-

derstanding and practical experience in the field of project management. The certification system according to the IPMA model is based on competence assessment (technical, behavioural and contextual), making use of two documents as a basis: one is the *IPMA Certification Regulations and Guidelines* – ICRG, and the other is the *IPMA Competence Baseline* – ICB.

These documents are used by authorised national member associations of IPMA (*Member Association – MAs*) and certification bodies (*Certification Bodies – CBs*), engaged in establishing and managing the certification program on four levels. The purpose of the ICRG document is to define the policy, the structure, the procedures and the practical execution of certification on four levels, giving not only the guidelines for the certification of individuals, but also for forming and validation of certification bodies.

The ICB document presents a set of knowledge and experiences expected from project, program and portfolio managers. It contains basic terms, the presentation of management skills, functions and processes that are part of good practice of project management, but also the knowledge and experiences of experts that can be implemented in a variety of situations. The candidates also use this material in preparing for the examinations. National associations and their certification bodies are authorised by IPMA to translate and use these documents titled *National Certification Regulations and Guidelines – NCRG* and *National Competence Baseline – NCB*, for the purpose of forming the bodies and the design, implementation and maintenance of the programs of project manager certification in their respective countries.

The implementation of the program of project manager certification by the certification bodies and within the national associations – members of IPMA has to conform to the IPMA policy, procedures, practice and requirements of the internationally recognized ISO 17024:2003 standard. These standards are accepted as adequate, the standards that can improve the quality of the process. The quality management system treats the certification body as a system whose elements: organizational structure, rules, processes, documents, are process-oriented and interrelated, so that all the certification activities can be conducted and controlled at any moment. The activities have to be internally and externally comprehensible and conducted to the purpose of maintaining a certain quality level and continual improvement.

According to [4], the quality management system in the certification body is documented within the *Quality*

Management Manual. The documents of the certification body describe the organization, procedures and forms, all in accordance with the ISO/IEC 17024:2003 standard. As stated in the ICRG document, the certification and recertification processes are to conform to the principles of this standard. As stated in [5], it is IPMA's recommendation that each certification body has a management system accredited by a national institute that should be a member of the *European Accreditation* and the *International Accreditation Forum.*

The implementation of ISO/IEC 17024:2003 standard requirements may be a solid basis for the establishment of certification bodies and project manager certification schemes. The standard specifies the requirements for the body operating in certification of persons, including the development and maintenance of the schemes for certification of persons, setting specific requirements that ensure that the certification bodies perform the certification work in a consistent, comparable and reliable manner. The requirements in this international standard should be deemed as general requirements for the bodies operating the certification of persons.

In order that the certification process should commence in a certain country, it is necessary that a certification body be established, that First Assessors should be appointed and that adjustment of ICRG and ICB to NCRG and NCB be effected. As quoted in [4], the national first assessors have a mentor, an experienced assessor from the already existing certification body. Item 5.2.1. of the ISO 17024:2003 standard stipulates the general requirements for assessoers:

- They should be knowledgeable of the respective certification scheme;

- They should have a comprehensive knowledge of the respective examination methods and exam documents;

- They should be competent in the field in which the examination is conducted;

- They should be capable of communicating in the exam language, both orally and in writing;

- They should be free of any interests so that they should be capable of making impartial and non-discriminatory decisions (assessments). [4] [8]

Additional requirements for the assessors defined by IPMA, stipulated in [4] are as follows:
- They should hold one of IPMA certificates at the moment of engagement (except the first assessor);

- They should be nominated by their assessors;

- They continually work on their professional development;

- They undergo a certain training.

The elements and requirements of the ISO 17024:2003 standard are implemented by IPMA in the ICRG document, however with some modifications given below:

1) Instead of the term "*examination*" (item 3.9. in ISO 17024:2003), the term "*assessment*" is used, and instead of the term "*examiner*" (item 3.10. in ISO 17024:2003) the term "*assessor*" is used. [4] [8]

2) According to [8], item 4.2.3. is defined as follows: „The certification body is formed by the Council on Certification, liable for the development and maintenance of the certification scheme for any type of certification. It is the obligation of the Council on Certification to represent the interests of all the parties involved in the certification scheme, justly and on equal basis, without giving preference to special interests of any party. Where the certification scheme is developed by other organizations, other than the certification body, each of such development agents is obliged to comply to the same principles". The modification of this item, according to [4], is in that the Council on Certification offers recommendations, rather than takes responsibility for the development and maintemance of the certification scheme.

3) In [8], item 4.2.5. is defined in such a manner that: "the Certification body is not allowed to offer nor conduct any training, nor aid others in preparation of such services, unless it proves that such a training is independent of assessment and certification of persons, in order that it should not violate the confidentiality and impartiality of its certification". According to the modification of this item given in [4], the certification body should not be in a position to offer nor provide training, nor aid others in the preparation of such services.

4) Item 4.3.5. is, according to [8], defined as follows: "Excessive financial or other constraining conditions, such as membership in the association or a group, shall not be a barrier to certification. A successful completion of the training course may be a requirement of a certification scheme, however, the recognition/approval of training courses by the certification body shall not endanger the impartiality nor reduce the need for assessment of requirements for certification". The modification of this

item within [4] is that the certification body should not insist on a successful completion of any training as a condition for the certification of the candidate.

5) In item 4.5. regarding the possibility of subcontracting, i.e., hiring an external body or individual for certain segments of work in the certification process (e.g., examination), stated in [8], the modification stated in [4] is about the requirement that certification bodies retain full control over all the core activities concerning certification.

There are some further adjustments made by IPMA regarding the implementation of the ISO 17024:2003 standard requirements, and given in the ICRG document. They are:

- The assessment of the candidate is to be performed by the certification body on the basis of information collected exclusively during the certification process.

- The assessor does not participate in the preparation or training of the candidate undergoing the certification process.

- The candidate that completes the certification process successfully is awarded a certificate and is entered into the IPMA Registry of certificate holders.

- The validity of certificates is 5 years, upon which period it is necessary that the recertification process for the same level, or the certification process for a new level are commenced.

The validation and revalidation of certification bodies is the responsibility of the *Certification Validation Management Board*. The purpose is to certify that the validation process complies with the IPMA regulations, that the ICRG and ICB documents are implemented correctly and and to ensure that the quality level remains constant. According to [4], the validation process is divided into: the first (initial) validation, the periodical tests and the revalidation. In case the certification body is accredited in accordance to the ISO 17024:2003 standard, the periodical tests are not necessary.

4.2. Certification levels of the IPMA program

The IPMA certification proframme has four levels (*a four-level-certification – 4-L-C*) and is devised as a continuous process of project manager competence development. Each of the four presented levels comprises and verifies an adequate education of the candidate and his/her competence (Figure 1).

Figure 1. *Competence levels in the IPMA model*

- **IPMA level A**® – *Certified Projects Director* shall be able to manage a complex portfolio of projects or program.

- **IPMA level B**® – *Certified Senior Project Manager* shall be able to manage complex projects.

- **IPMA level C**® – *Certified Project Manager* shall be able to manage projects with limited complexity.

- **IPMA level D**® – *Certified Project Manager Associate* shall be able to apply the knowledge in project management as member of the team in a project under way.

The validity period of the certificate for each of the four levels is limitted to 5 years, upon which time it is necessary that the validity of the certificate be renewed through a recertification process. The certification and the recertification processes are conducted in the English language, as well as in the mother tongue of national associations, members of IPMA which operate the certification and the recertification processes in collaboration with the IPMA association.

According to [6], by the end of 2009, more than 110,000 certificates following the IPMA model were issued to project managers and assistants all over the world, and the number of certified candidates planned for 2010 is presented per levels in Figure 2.
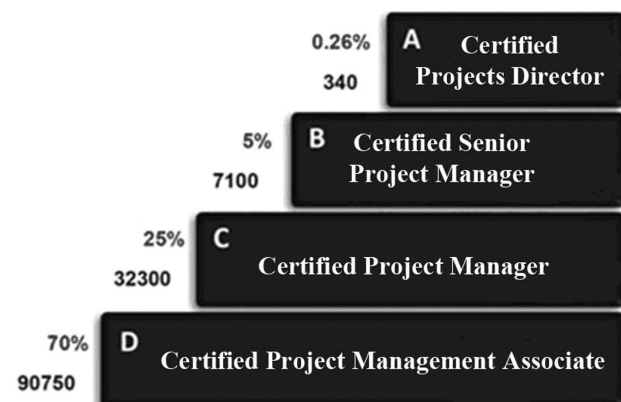

Figure 2. *Number of IPMA certificates planned by the end of 2010, per levels [16]*

As quoted above, the certification body YUPMA Cert operates within the Serbian Project Managemant Association – YUPMA and conducts the program of international certification of project managers on the original program and under the contract with IPMA. This body is the only authorised body to issue official project management certificates on the IPMA model in this country. The certificate the candidate is issued upon a successful completion of the program is fully valid and fully correspondent in all the countries members of IPMA, and is recognized and accepted in those countries that are not direct signatories of this agreement.

5. PMI organization

The *Project Management institute* – PMI is an organization established in the U.S.A. in 1969 with the aim to proactively develop the practice and the profession of project management, working towards ensuring that organizations adopt and implement the project management concept and succeed in achieving their goals. At the moment, PMI has around 420,000 members and certified individuals.

Since 1984, the PMI organization has been engaged in the development and implementation of the project manager certification program, for the purpose of improving the project manager profession and recognizing the achievements of the professionals in this area. The first certification program commenced in 1984 was for a PMP$^®$ – *Project Management Professional*; today, approximately 370,000 professionals in this field are the holders of this certificate. Certificate holders need not be PMI members.

5.1. Certification on the PMI model – PMI certificates for project managers

As an international organization with more than 40 years of experience in supporting the project management profession, PMI offers an opportunity to individuals educated and experienced in this field to acquire an internationally recognized certificate of their competence. The *family of credentials* cosists of:

- Certified Associate in Project Management – CAPM$^®$

- Scheduling Professional – PMI-SP$^®$

- PMI Risk Management Professional – PMI-RPM$^®$

- Project Management Professional – PMP$^®$

- Program Management Professional – PgMP$^®$

The PMI certificates certify a person's skill and committment in doing the work in the field of project management. In order that the candidate be issued a certificate, he/she is expected to meet certain educational and experience-related requirements set by PMI, so that he/she can implement the knowledge in the field of project management to answer the examination questions and offer adequate response to certain situations and scenarios. To revalidate the CAPM$^®$ certificate, the candidate is expected to pass the exam to extend the certificate validity upon its expiry after a five-year period, whereas to revalidate the other PMI certificates the candidate is expected to constantly express his/her professional committment to the project management field by satisfying the *Continuing Certification Requirements* – CCR program.

PMI also took into consideration the need to adjust the manner of work to the requirements of international standards, therefore the PMI certification program for PMP$^®$ – *Project Management Professional* was accredited in 2006, following the ANSI/ISO/IEC 17024:2003 standard requirements. Thus PMI became the world's first project management organization whose one program is accredited in conformity to the requirements of this standard. As maintained in [15], the accreditation was performed by the *American National Standard Institute* – ANSI, whereas the *PMI's Certification Program Department* had already certified their own quality management system implemented in conformity with the requirements of the ISO 9001:2000 standard. This fact is further corroborated by the statement of Roy Swift, the Program Director for Personnel Certifier Accreditation of the American National Standards Institute, quoted in [15]: "It has become evident on an international level that is is necessary that certification programs of persons should be accredited since it is services, rather than products, that contribute to the global economy". According to [13], ANSI is an official representative of the U.S.A. in the ISO and also a member of the *International Accreditation Forum* – IAF.

The certification programs accredited in conformity to the requirements of these standards contribute to the affirmation of quality in the PMP programs development and management and, naturally, boost the credibility of the holders of these certificates and the confidence of the organizations that hire them as regards the importance of the PMP certificate. Moreover, they verify the fact that a certain policy is implemented to ensure that all candidates will be treated as equal, that the examination is consistent and fair and that quality improvement is especially taken care of.

The PMP® program was introduced in 1984 with the aim to identify the persons that are capable of implementing the knowledge of project management in practice, of leading and directing the project team and accomplish the project task with constraints in the schedule, in the budget and in the resources. The candidates seeking the PMP® certificate are expected to be:

• responsible for all the project aspects during the project's life-cycle;

• able to coordinate the operations of multi-functional teams engaged in the project execution;

• able to demonstrate the necessary knowledge and experience in the implementation of certain methodologies in project management.

The PMP® holders thus earn a large number of benefits:

• the PMP® holder's reputation is higher both in *their organizations and in the global project management community;*

• *the organizations that employ the PMP® holder can thus make use of the PMP program accreditation on ISO 17024:2003 requirements as an argument that makes that person more qualified and more competent and capable;*

• *it is ensured that the PMP® holder will be recognized within the global business community. [14]*

The interest in acquiring the PMP® certificate is increasing worldwide in the last years, and this is further proved by the facts on the number of PMP® holder presented in Figure 3. It is clear that, since this type of certification was introduced in 1984, the number of persons that recognize the importance of being a PMP® holder constantly increases. This means that the advantages of this certificate in this profession is globally recognized.
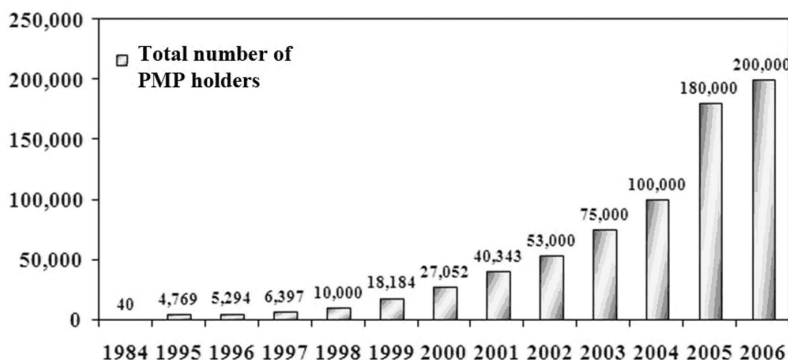

Figure 3. *The trend of interest in PMP® certificates [7]*

According to the PMI research in 2007 concerning the income of project managers, PMP® holders, in the U.S.A. and the differences in earnings as regards being or not being a PMP® holder, Figure 4 shows that the difference is a significant one.
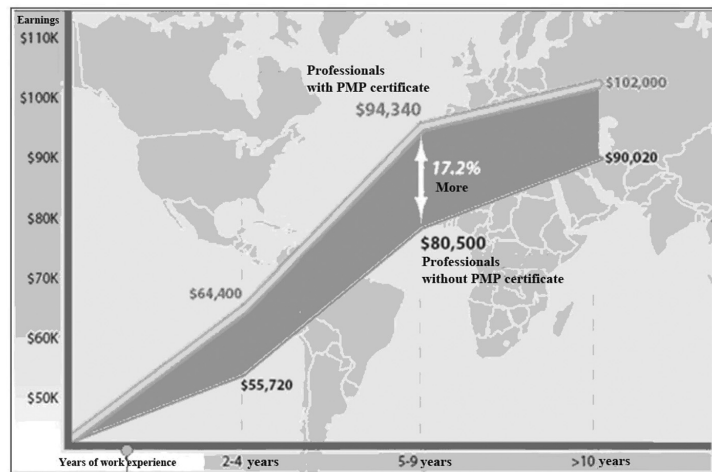

Figure 4. *Difference in earnings of project managers, PMP® holders and non-PMP® holders in USA, PMI survey, 2007 [7]*

Reaccreditation after every 5 years is an imperative and so is the obligation to maintain the certification program quality in order that the credibility of professional certificates should be preserved. According to [15], two more PMI programs will be included into the accreditation process following the ISO 17024:2003 in the next cycle: *Certified Associate in Project Management* – CAPM® and *Program Management Professional* – PgMP®.

6. Conclusion

The conduct of the project manager certification programs by authorised associations worldwide helps persons verify their existing and newly acquired knowledge, affirm their competence as project managers and contribute to the development of the profession. The project today is increasingly an enterprise that is not executed on only one location, under the direct supervision of the project manager and the team, but is rather managed from a temporal and geographical distance, i.e., virtually. Managing such projects requires that virtual teams should be formed, those that will plan, coordinate, supervise the execution from a distance, therefore it is an advantage if a project manager or a team member has a formal certificate of his/her competence, since it contributes to its recognition.

A noteworthy contribution in the development of the project management field and the project manager profession in the last decades has been the work of the international organizations IPMA and PMI. Not only do they initiate things, organize meetings, programs and other forms of improvement, exchange of knowledge and experience, but they have also launched the project manager certification programs, to be followed by the associations members and their certification bodies worldwide. In order that the certification program be performed and that the candidates get a valid certificate, these international project management organizations recommend that the associations and their certification bodies, as well as the certification programs should be organized in conformity with the requirements and principles of the relevant international standards. In case of associations and their certification bodies that perform the project manager certification programs, the quality management system certification is performed in accordance with the requirements of the ISO 9001:2008 standard – Quality Management Systems – Requirements, whereas the accreditation of the certification bodies is based on the ISO 17024:2003 – Conformity Assessment – General Requirements for Certification bodies operating the certification of personnel.

The paper presents the elements of the project manager certification programs on the basis of IPMA and PMI models, especially highlighting the segments where the requirements of the ISO 17024:2003 standard are implemented, as this standard defines the work of the organizations operating the certification of persons. The fact is that both IPMA and PMI organizations recognized the importance of the implementation of requirements of this standard and incorporated them into their certification models; it is obvious that they thus confirm the quality of the program and earn a higher credibility to the certificate holders, as well as higher trust into the certificate by the organizations that hire them.

It is in this context that IPMA defined the *IPMA Certification Regulations and Guidelines – ICRG* document for establishing certification bodies, launching and conducting the project manager certification programs on the basis of the ISO 17024:2003 standard. This document is translated and applied by national associations – members of IPMA under the title: *National Certification Regulations and Guidelines – NCRG*, for the purpose of establishing their own certification bodies and developing certification programs, since in this way they can later commence the accreditation process.

In establishing the YUPMA Cert certification body and creating the project manager certification programs in Serbia, the Serbian Project Management Association – YUPMA, as a full member of IPMA, has applied the guidelines given in this document. At present, the Association is engaged in preparing the documents required to commence the accreditation process of the certification body and the project manager certification programs on the basis of the requirements of the the SRPS ISO/IEC 17024:2003 standard by the Accreditation Body of Serbia, the only body authorised in the Republic of Serbia, under the Accreditation Act (article 5), to accredit a certification body operating accreditation for persons. [12]

The difference in the approach and the implementation of the requirements of the standard is evident in that IPMA incorporated the requirements of the ISO 17024:2003 standard into the above mentioned document which serves as basis for establishing certification bodies and developing certification programs; it is in this manner that all four levels of certification are included, whereas in PMI attention is paid only to certain programs. Namely, PMI also had to conform their way of operation and programs to the requirements of the standard, however, one PMI certification program out of five was accredited on the basis of the ISO/IEC 17024:2003, for PMP$^{®}$ – Project Management Professional. One reason may be that it is this program that project managers worldwide are interested in, since a sertified project management professional is the person responsible for each of the aspects of the project during its life-cycle, able to lead a project team and complete the project task burdened with constraints in time, budget and resources. Other PMI certification programs cover sertain aspects, such as planning or risk management and they attract less interest, which cannot be said for the PgMP$^{®}$ – *Program Management Professional* and CAPM$^{®}$ – *Certified Associate in Project Management*; hence these two programs will be included into the accreditation process on the basis of the ISO 17024:2003 in the next reaccreditation cycle.

All this highlights the interest the project management professionals' show in certification, as well as the recognition of the importance of the certificate the organizations that hire them show. Therefore it is the interest of international organizations such as IPMA or PMI, as well as national associations, to offer the prospective candidates an opportunity of certification, devised and conducted on the basis of world standards.

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