From MoProSoft Level 2 to ISO/IEC 29110 Basic Profile: Bridging the Gap

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Abstract. The spread of the interest and the need for process reference models, specifically for small and medium software development organizations, has been a catalyst for generating ISO/IEC 29110 Software Engineering — Lifecycle profiles for Very Small Entities. Based on the Mexican standard NMX-I-059-NYCE-2005, better known as MoProSoft, ISO/IEC 29110 is the first international standard specifically designed for very small entities.

Thanks to the COMPETISOFT Project and MoProSoft, the background knowledge and models adoption experience have been introduced in Latin America. In Mexico more than 300 organizations have been evaluated in NMX-I-059-NYCE-2005, and in 2009 MoProSoft became a national standard in Peru. As a whole, it gives small software development organizations in the region an advantage in adopting an international standard.

This paper clarifies the gap between ISO/IEC 29110 and MoProSoft level 2. As a result of a theoretical and practical review both standards were mapped, coverage between them was defined and some recommendations were suggested to adopt the Basic Profile of the new international standard starting from the Mexican standard.

Keywords: ISO/IEC 29110, MoProSoft, gap, coverage, adoption, very small entities.

1 Introduction

The increase of the processes capabilities of a software development organization is regularly guided by a process reference model, for that reason the models should be attached to the environment and maturity of the organization.

The need for process reference models, specifically those designed for small and medium organizations, aroused the creation of standards that would fit the particular environment and accomplish objectives of those organizations.

MoProSoft [1], a process reference model developed in Mexico, is one of the first widely known efforts, and then comes its offspring COMPETISOFT [2], generated by the Latin American organizations and research groups, thus bringing to the region a culture of models adoption and increasing competitiveness.

Those attempts were taken into account by Working Group 24 (WG 24) of ISO/IEC [3], who focused on creating an international standard for very small entities ISO/IEC 29110 [4], based on the experience acquired from developing MoProSoft.

Considering the common origins, the similarity of the target audience and objectives that pursue both standards, a mapping between the ISO/IEC 29110 Basic Profile and MoProSoft was carried out and presented in this work. One of our main concerns was the question: *What is needed to be done or improved in order to achieve ISO/IEC 29110 Basic Profile if the organization has already adopted MoProSoft level 2?*

Finding a clear answer to this question would be a step forward in motivating MoProSoft evaluated organizations to also obtain international recognition adopting ISO/IEC 29110. This work was done by the UNAM specialists in software process together with consultants from INNEVO [24] who have experience in the adoption of the Mexican standard and an expert involved in the development of both standards.

This paper is organized as follows: in part 2 we present the Mexican standard for software industry MoProSoft, part 3 shows the origins and structure of ISO/IEC 29110. Later, in part 4 the mapping between standards is presented; part 5 concentrates and interprets the results and in part 6 we present our answer to the question. Finally we conclude.

2 MoProSoft

In 2002 the Ministry of Economy in Mexico [5], launched a call for proposals to create a process reference model that would accumulate up-to-date sets of best practices in the industry of software development of the country.

The proposal was developed together with the National Autonomous University of Mexico (UNAM) [6], the Mexican Association for the Quality in Software Engineering (AMCIS) [7] and the Ministry of Economy, under the coordination of Hanna Oktaba, a coauthor of this paper.

At the beginning of 2004 the process reference (MoProSoft) and evaluation (EvalProSoft) [8] models were defined and by mid 2004 the controlled testing of both models started.

The controlled testing objective was to demonstrate the feasibility of increasing process capability levels of a software development organization in a short period of time. The group of study was composed of four organizations, each made up of about 18 members.

The average starting process capability level of the organizations was 0.13 and at the end of the test resulted in 1.19, achieving these results in eight months. By the end

of the testing period, each organization got to level 1 of MoProSoft, similar to maturity level 2 CMMI [9].

By the third quarter of 2005 MoProSoft was turned into the Mexican standard *NMX-I-059-NYCE-2005 – Information Technology – Software – Development and Maintenance Process Reference Model and Evaluation Model* [10]. This Mexican standard is composed of four parts:

- Part 01 Concepts and products definition
- Part 02 Process requirements (MoProSoft)
- Part 03 Process implementation guidelines
- Part 04 Evaluation principles (EvalProSoft)

The normalization work was strictly coordinated by the association of Electronics Standardization and Certification (NYCE) [11].

The MoProSoft process model consists of three layers or categories:

- High Management: contains the Business Management process.
- Management: composed of the Process Management, Projects Management and Resources Management processes.
- Operation: includes the Specific Project Management process (SPM), Software Development and Maintenance process (SDM).

The three-layer approach reflects the structure of majority of software development organizations in Mexico. Consequently by the end of 2010 more than 300 organizations in Mexico were certified under NMX-I-059-NYCE-2005.

This work targets mainly the Operation layer, which contains core processes, due to their critical importance for software development organizations.

2.1 MoProSoft in Latin America

In Latin America the Mexican standard gathered momentum when the Ibero-American Program for Science, Technology and Development (CYTED) [12], granted the project *COMPETISOFT: Process improvement to enhance the competitiveness of small and medium organizations in Latin America* [2].

COMPETISOFT defined three objectives: (i) To create a common methodological framework in Latin America. (ii) To spread the process culture into the researchers, academics and students communities. (iii) To influence in the standardization and certification entities, in order to establish a common and mutually recognized mechanism [2].

Initially MoProSoft provided a base for COMPETISOFT which turns out expanded and enhanced. The main improvements were the incorporation of the Software Maintenance agile process [13] to the Operation layer, along with the inclusion of the experience and viewpoints of 13 countries and 23 research groups.

Another effort was made in Peru, where National Institute for the Defense of Competition and Protection of Intellectual Property (INDECOPI) [14] developed a technical standard based on MoProSoft, the *Software Engineering: Software Development and Maintenance Process and Evaluation Models NTP 291.100:2009* [15]. The Peruvian standard was published in 2009.

2.2 Colored Version

After the publication of the Mexican standard, a colored version of MoProSoft was presented [16]. In that version each task and work product is colored according to their capability level, see Table 1, in order to facilitate their understanding and clarify their scope.

The capability levels of the processes are defined according to the Mexican standard *NMX-I-006/02-NYCE-2004 Information Technology – Process Assessment – Part 02: Realization* [17], which in its turn is based on the international standard *ISO/IEC 15504-2: 2003 Information technology – Process assessment – Part 2: Performing an assessment* [18].

Table 1. ISO/IEC 15504-2:2003 capability levels and their corresponding colours.

ISO/IEC 15504-2:2003 Capability Levels		
Level	Level Name	Assigned Color
5	Optimizing process	Clear
4	Predictable process	Pink
3	Established process	Green
2	Managed process	Blue
1	Performed process	Yellow
0	Incomplete process	Not used

In this work the colored version was used to define the capability level of an organization, in this case we took into account the tasks and work products corresponding to MoProSoft level 2, that is to say, all yellow and blue tasks and work products were considered for the mapping.

3 ISO/IEC 29110

In 2005 the Subcommittee 7 [19] of ISO/IEC Joint Technical Committee 1 decided to start a new project with the objective of creating an international standard addressed to the Software Life Cycle Profiles and Guidelines to be used in Very Small Entities (VSEs), organizations with less than 25 employees.

For that purpose WG 24 was created taking charge of a new project under the coordination of Tanin Uthayanaka from Thailand [19]. Having identified problems that affect small organizations, WG24 defined a set of objectives for the group to achieve by implementing the new project of standard, ISO/IEC 29110 Software engineering — Lifecycle profiles for Very Small Entities (VSEs) [4].

The first meeting of WG24 took place in Thailand in 2006, and was attended by the United States, India, Ireland, Belgium, Finland, Luxembourg, Canada, New Zealand, South Korea and Mexico. During the meeting the group made the decision to take the Mexican standard as a basis for their work [20].

The ISO/IEC 29110 standard is composed of five parts arranged into three groups, being this the family of documents:

- Overview
  - Part 1 Overview
- Profiles
  - Part 2 Framework and Taxonomy
  - Part 4 Specifications of VSE Profiles
- Guides
  - Part 3 Assessment Guide
  - Part 5 Management and Engineering Guide

Overview presents the main concepts to gain a better understanding and to make use of the documents of the standard.

Profiles are defined with the purpose of concentrating the essentials of the rest of the documents, in order to be tailored to organization's needs and characteristics.

The *Framework and Taxonomy* part specifies common elements of each defined profile, while *Specifications of VSE Profiles* lays down the components and structure for each created profile.

The *Guides* part defines applying principles to develop an assessment in order to determine the processes capability and maturity of the organization, in *Assessment Guide*. Also *Management and Engineering Guide* offers orientation about the use and implementation of each profile.

At the moment, part 5 for Basic profile of the Generic profiles group is published. Other three generic profiles: Entry, specific for startup entities; Intermediate and Advanced are under development. The scope of this work is centered on Basic Profile.

3.1 Basic Profile

Basic Profile was published in May 2011, known as ISO/IEC 29110-5-1-2 [21], where digit 1 means that it is a generic profile, and digit 2 represents a consecutive number. Previous to the Basic Profile comes the Entry Profile therefore getting number 1.

The rationale of Basic Profile is to define a software development and project management guide for a subset of processes and outcomes of ISO/IEC 12207 [22] and products of ISO/IEC 15289 [23], appropriate for characteristics and needs of VSEs [21].

Basic Profile describes a software development of a single application by a single project team with no special risk or situational factors. This kind of project may be carried out to fulfill an external or internal contract [21].

Software Implementation (SI) and Project Management (PM) are the two processes that compose Basic Profile. The reason to include PM is that VSEs' core business is software development and their financial success depends on project profits [21].

The PM process input is the customer's *Statement of Work*, used to create *Project Plan*. The execution of the SI process is driven by the *Project Plan*. The PM Project Assessment and Control activities compare project progress against the *Project Plan* and actions are taken to eliminate deviations or incorporate changes into it. The PM Project Closure activity delivers *Software Configuration*, produced by SI, and gets the

customer's agreement to formalize the end of the project. A project repository is established to save work products and to control their versions during the project.

The purpose of the PM process is to establish and carry out activities of SI process in an efficient way, which allows fulfilling the project's objectives within the expected quality, time and costs. The purpose of the SI process is to define a systematic performance of the Analysis, Design, Construction, Integration and Tests activities for new or modified software products according to specific requirements.

4 Mapping ISO/IEC 29110-5-1-2 and MoProSoft

The mapping was made taking into consideration an organization evaluated in MoProSoft level 2 and asking oneself: *What is needed to be done or improved in order to achieve ISO/IEC 29110 Basic Profile if the organization has already adopted MoProSoft level 2?*

Finding the proper answer will clarify the gap and ease the transition between standards, providing the organization with benefits of international recognition.

Therefore, the tasks and work products of each process of ISO/IEC 29110-5-1-2 were faced against the tasks and work products of the equivalent process in MoProSoft, as shown in Table 2.

Table 2. Equivalence between processes involved in the mapping.

MoProSoft		ISO/IEC 29110-5-1-2
Specific Project Management (SPM)	⇔	Project Management (PM)
Software Development and Maintenance (SDM)	⇔	Software Implementation (SI)

For consistency and simplicity reasons, the acronyms used to refer to each task were taken considering notations used in each standard, see Table 3. It is important to note that, according to the table above, it is possible to use the same acronym for both types of tasks in the Mexican standard, since a task from PM is always mapped against a SPM task, and a task from SI, if mapped, will always be against SDM.

Table 3. Acronyms used to refer to each task.

MoProSoft		ISO/IEC 29110-5-1-2	
Specific Project Management	A#.#	Project Management	PM.#.#
Software Development and Maintenance		Software Implementation	SI.#.#

Alongside with the task mapping, mapping corresponding to work products was carried out.

4.1 Metrics

The capability ratings defined in ISO/IEC 15504-2:2003 [18] were used to determine the *Coverage* values essential for this work, see Table 4, with the aim of defining the Coverage level (*C*). Then a *Score* was associated to each *C* value, which in its turn is used to define the Quantitative level (*Q*).

Table 4. ISO/IEC 15504-2:2003 Capability ratings and scores assigned.

ISO/IEC 15504-2:2003 Capability Ratings			
Rating	Coverage level	Percentage	Score assigned
1	Totally (T)	85-100%	1.0
2	Largely (L)	50-85%	0.7
3	Partially (P)	15-50%	0.3
4	Not achieved (N)	0-15%	0.0

The C and Q values apply for tasks (C_T or Q_T), work products (C_W or Q_W) and process (C_P or Q_P).

For example, the C_T value of the task SI.3.5 is obtained like that:

$$C_T\left(\mathrm{SI.3.5}\right)=\mathrm{L}$$

And the Q_T value for the same task as follows:

$$Q_T\left(C_T\left(\mathrm{SI.3.5}\right)\right)=Q_T\left(\mathrm{L}\right)=0.7$$

The C_W and Q_W are calculated in the same way.

The Q_P is calculated by the sum of each of the quantitative levels of the process tasks divided between the total num of the process tasks:

$$Q_P\left(process\_acronym\right)=\frac{\sum Q_T\left(C_T\left(T_i\right)\right)}{\left|T\right|}$$

Where T is the set of tasks, and each T_i is a task of the process, for example:

$$Q_P\left(\mathrm{SI}\right)=\frac{36.9}{41}=0.9$$

Finally, the C_P can be calculated using the Q_P value and the values of Table 4, then:

$$C_P\left(\mathrm{SI}\right)=\mathrm{T}$$

Those values are used to clarify the gap between standards, and are presented in the Numerical results section.

4.2 Coverage Rules

The coverage rules that guided the mapping are based on the interpretation of written texts of each standard, their inputs and outputs as well as general objectives.

All compared tasks were considered equal; so to say we assumed that they require the same amount of effort, time and resources to be fulfilled. That is why it is crucial

to emphasize that the coverage values obtained after applying those criteria may not match those applied by an accreditation body during an assessment process. Each of the coverage rules were detailed for Tasks and Work Products.

4.2.1 Tasks

A task from ISO/IEC 29110-5-1-2 is considered *totally* covered if there exist one or more tasks from MoProSoft that fully accomplish its purpose, an example is shown in Table 5. The first column presents the task to cover; the second column shows the task that covers it; the third one includes Quantitative level and the last one Coverage level. In the example below, the task SI.5.4 of ISO/IEC29110-5-1-2 is totally covered by the task A5.6 of MoProSoft.

Table 5. Example of a totally covered task.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
SI.5.4 Perform software tests using *Test Cases and Test Procedures* for integration testing and document results in *Test Report*.	A5.6 Execute the system testing according to *System Test Plan*, document the results in *System Test Report*.	1.0	T

A task is considered *largely* covered if there exist one or more tasks that cover a part of it. The effort needed to fill in the gap is taken into account, based on the recommendation to achieve the totally covered qualification. Table 6 shows a largely covered task. In this example the task PM.1.14 of ISO/IEC29110-5-1-2 is largely covered by the task A1.16 of MoProSoft. The gap between this task and the required by the international standard could be closed if the Recommendation is observed.

Table 6. Example of a largely covered task.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
PM.1.14 Review and accept *Project Plan*. Customer reviews and accepts *Project Plan*, making sure that the *Project Plan* elements match *Statement of Work*.	A1.16 Validate *Project Plan* and *Development Plan*.	0.7	L
Recommendation			
MoProSoft does not mention that Client has the responsibility to accept or reject *Project Plan*, for this reason it is necessary to agree previously with the Client on its acceptance.			

A task is considered *partially* covered if there exists a task that tries to cover it, or if its objective is achieved in a clear way by the execution of the whole process. Table 7 gives an example of a partially covered task. In this case the task SI.3.2 of ISO/IEC29110-5-1-2 is partially covered, the reason is that it results obvious that an understanding of requirements is executed, in some way, by the organization, whether the Mexican standard specifies it or not.

Table 7. Example of a partially covered task.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
SI.3.2 Understand *Requirements Specifications*.	-	0.3	P

Finally, a task is *not achieved* if there does not exist a task with the same or similar objective. In this case the task will have to be done entirely on its own, in order to implement the standard. Table 8 shows a not achieved task.

Table 8. Example of a not achieved task.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
PM.1.10 Document the *Version Control Strategy* in the *Project Plan*.	-	0.0	N

4.2.2 Work Products

A work product is an artifact generated while executing a task or a set of tasks. Both standards include a section that lists each work product and their characteristics. The MoProSoft's sections are: *Inputs*, *Outputs* and *Intern Products*, while the ISO/IEC29110-5-1-2's section is: *9. Product description*.

For the purpose of this work, these sections were taken as guidelines for the mapping and scope limits. We applied the same rules of coverage defined for the tasks.

5 Numerical Results

This section displays numerical values obtained from tasks and work products mappings. Finding the answer to the initial question *What is needed to be done or improved in order to achieve ISO/IEC 29110 Basic Profile if the organization has already adopted MoProSoft level 2?* we will use the values *Q* and *C*, explained earlier.

5.1 Values Obtained for Quantitative and Coverage Levels of Tasks

ISO/IEC 29110-5-1-2 presents 26 tasks in the PM process, 18 of them are totally covered by MoProSoft, 3 are largely covered and 5 are not achieved. The Q_P of PM process is 0.77, obtained from:

$$Q_P(\text{PM}) = \frac{(18\times 1.0)+(3\times 0.7)+(0\times 0.3)+(5\times 0.0)}{26} = \frac{20.1}{26} = 0.77$$

The SI process has 41 tasks defined, 34 are totally covered by MoProSoft, 2 are largely covered, 5 partially covered and none is not achieved. The Q_P of SI process is 0.9, detailed as follows:

$$Q_P(\text{SI}) = \frac{(34\times1.0)+(2\times0.7)+(5\times0.3)+(0\times0.0)}{41} = \frac{36.9}{41} = 0.90$$

Consequently Table 9 demonstrates a summary of values obtained from mapping the tasks.

Table 9. Mapping results.

ISO/IEC 29110-5-1-2 Processes	Tasks	Score	Q_P	Totally covered	Largely covered	Partially covered	Not achieved
PM	26	20.1	0.77	18	3	0	5
SI	41	36.9	0.90	34	2	5	0
Total	67	57.0	0.85	52	5	5	5

We can conclude that an organization evaluated in MoProSoft level 2 covers 85% of tasks defined in ISO/IEC 29110-5-1-2. It is viable to bridge the gap between both standards, for the sake of total tasks coverage, by following the suggestions given in the section Bridging the Gap.

5.2 Values Obtained for Quantitative and Coverage Levels of Work Products

ISO/IEC29110-5-1-2 defines 22 work products, 20 are *totally* covered by the work products defined in MoProSoft, one is *largely* covered and one is *not achieved*. Not totally covered work products are demonstrated in Table 12 below.

The Q_W value that involves all the work products was calculated as follows:

$$Q_W(\text{PM} \wedge \text{SI}) = \frac{(20\times1.0)+(1\times0.7)+(0\times0.3)+(1\times0.0)}{22} = \frac{20.7}{22} = 0.94$$

6 Bridging the Gap

We should note that only tasks and work products qualified less than *totally* covered will be presented, taking into account all those qualified as *largely*, *partially* or *not achieved*.

6.1 Not Totally Covered Tasks

This section concentrates all the tasks identified as not totally covered by MoProSoft, mentioning those with values L, P or N. Moreover we offer a recommendation for each task to achieve a T value. The PM process tasks are presented in Table 10.

Table 10. Not totally covered tasks of Project Management.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
PM.1.8 Calculate and document the project's *Estimated Effort* and *Cost*.	A1.10 Evaluate and document the *Estimated Cost* of the project.	0.7	L
Recommendation			
In MoProSoft calculating *Estimated Effort* is not explicitly mentioned. However, the *Cost* value is calculated, which implies that the effort estimates need to be calculated in some way, for instance in hours. Notice that this calculation is not obligatory.			
ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
PM.1.14 Review and accept *Project Plan*. Customer reviews and accepts *Project Plan*, making sure that the *Project Plan* elements match *Statement of Work*.	A1.16 Validate *Project Plan* and *Development Plan*.	0.7	L
Recommendation			
MoProSoft does not mention that Client has the responsibility to accept or reject *Project Plan*, for this reason it is necessary to agree previously with the Client on its acceptance.			
ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
PM.2.1 Monitor the *Project Plan* execution and record actual data in *Progress Status Record*.	A3.3 Create *Monitoring Report* considering *Activities Report*.	0.7	L
Recommendation			
MoProSoft does not explicitly suggest to record actual data in *Progress Status Record*, yet the work product *Monitoring Report* is designed for that purpose.			
ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
PM.1.10 Document the *Version Control Strategy* in the *Project Plan*.	-	0.0	N
PM.1.15 Establish the project repository using the *Version Control Strategy*.	-	0.0	N
PM.2.5 Perform backup according to the *Version Control Strategy*.	-	0.0	N
PM.2.6 Perform *Project Repository* recovery using the *Project Repository Backup*, if necessary.	-	0.0	N
PM.4.2 Update *Project Repository*.	-	0.0	N
Recommendation			
MoProSoft does not require a special repository for the project, however there exists a repository called *Knowledge Database* that includes all the data related to the organization. It already includes the project, for that reason it is necessary to define the management of *Project Repository* and *Version Control Strategy* in a similar way as the *Knowledge Database* management is defined.			

In Table 11 we offer recommendations for the tasks corresponding to the SI process.

Table 11. Tasks of Software Implementation not totally covered.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
SI.3.5 Establish or update *Test Cases and Test Procedures* for integration testing based on *Requirements Specification* and *Software Design*. Customer provides testing data, if needed.	A3.7 Develop or modify *Integration Testing Plan*.	0.7	L
Recommendation			
MoProSoft provides a work product called *Integration Testing Plan*. This plan should include *Test Cases and Test Procedures* explicitly.			
ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
SI.5.6 Update *Traceability Record* if appropriate.	-	0.7	L
Recommendation			
Even though MoProSoft does not take it as a task, it defines a work product called *Traceability Registry* especially for this purpose. Refer to it to perform the task.			
ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
SI.1.2 Set or update the implementation environment.	-	0.3	P
SI.3.2 Understand *Requirements Specifications*.	-	0.3	P
SI.4.2 Understand *Software Design*.	-	0.3	P
SI.5.2 Understand *Test Cases* and *Test Procedures*. Set or update the testing environment.	-	0.3	P
SI.6.2 Understand *Software Configuration*.	-	0.3	P
Recommendation			
The mentioned above tasks are not explicitly stated in MoProSoft, nevertheless it appears clear that if any of those tasks are not carried out properly, software construction won't be possible.			

6.2 Not Totally Covered Work Products

This section focuses on the work products identified as *not totally* covered by MoProSoft, see Table 12.

Table 12. Not totally covered work products.

ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
Project Repository	Knowledge Database	0.7	L
Recommendation			
MoProSoft does not require a special repository for the project, however there exists a repository called *Knowledge Database* that includes all the data related to the			

organization. It already includes the project, but it is strongly advisable to create a specific repository for the project following the adequate management policies as in the *Knowledge Database*.			
ISO/IEC 29110-5-1-2	MoProSoft	*Q*	*C*
Project Repository Backup	Knowledge Database	0.0	N
Recommendation			
MoProSoft does not define a mechanism to create a specific repository for the project. In order to generate this product, it will be necessary to create a backup and define the management policies to do it.			

After all we can declare that what is needed to cover the international standard starting from MoProSoft level 2, is feasible to achieve in a short period of time and with little amount of effort following the recommendations, thus getting a great return of investment.

Conclusions and Future Work

This paper describes a mapping between the international standard ISO/IEC 29110-5-1-2 and the Mexican standard NMX-I-059-NYCE-2005, MoProSoft. As a result of the theoretical and practical review done by specialists in software processes, consultants from INNEVO with experience in the adoption of the Mexican standard and the expert participation of a close developer of both standards, the gap between standards was clarified and punctual recommendations in order to adopt the international standard starting from MoProSoft level 2 were offered.

The MoProSoft broad scope of influence in Latin America, thanks to COMPETISOFT and NTP 291.100:2009, serves as a strong factor to believe that software development organizations in the region receive a real opportunity to adopt an international standard. Besides, the coverage values obtained from the mapping, 0.77 for PM process and 0.9 for SI process, suggest an attainable objective of reaching not only national, but international recognition as well.

Finally we conclude that an organization evaluated in MoProSoft level 2 covered 85% of tasks and 94% of work products defined in ISO/IEC 29110-5-1-2, making it possible to acquire an international standard in a short period of time and little effort if the suggested recommendations are followed.

Acknowledgements

This work has been possible thanks to MC. Marcela Peñaloza Báez and Fermín Marín Arzate General Directors of DCV-DGTIC-UNAM and INNEVO respectively. Also we would like to thank Nubia Fernández from DCV-DGTIC-UNAM and Mauricio Arreola from INNEVO for their constant participation.

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