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SEEKING PROCESS MATURITY WITH DSDM ATERN

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Abstract. It is important for an organization to know what capability/maturity of the process a chosen methodology could ensure. This paper is focused on DSDM Atern process maturity by CMMI.

The goal is to assess DSDM Atern by CMMI-DEV version 1.3 and propose the improvements to reach CMMI maturity level 3. A capability profile ensured by DSDM Atern has been obtained. The appraisal results showed that DSDM Atern ensures CMMI maturity level 2. Constraints and problematic areas of DSDM Atern methodology were discovered. In order to reach CMMI level 3 some recommendations for DSDM Atern additions were developed.

Keywords: CMMI, DSDM Atern, Agile methodology capability assessment, CMMI and Agile synergy.

Introduction

In order to improve their software process, organizations choose some software development methodology, for example, RUP as a basis. There are various methodologies, so it is very important for an organization to learn how it could benefit from the chosen methodology prior to implementing it, because the implementation of a methodology and the assessment of the capability/maturity achieved are expensive both financially and time-wise. It is also important to match the methodologies with software process models. The choice of methodology should depend on what process capability/maturity it could ensure for an organization. Agile methodologies become more and more popular recently. A lot of success stories using XP, Scrum, and DSDM have appeared.

When we talk about Agile, we talk about the whole family of methodologies, bounded by the same principles. Agile manifesto (Fowler and Highsmith, 2001) describes these principles. So, we gain an opportunity to compare different Agile methodologies and treat them by similar approach.

Since the appearance of the first Agile methodologies in late nineties, Agile was considered to be the opposite of traditional methodologies and as a result the opposite of CMMI. Later some publications about CMMI and agile compatibility (Marcal et al., 2007; Fritzsche and Keil, 2007; David, 2005) showed up, offering great results while combining CMMI and agile.

On the other hand, CMMI also moved towards Agile compatibility. Agile has been included in CMMI V.1.3, together with interpretation guidelines by adding notes how to interpret agile practices to the applicable process areas. These changes made an assessment

of an organization that uses agile practices much easier, compared to CMMI V1.2.

CMMI maturity level 2 is particularly important for small and medium-size businesses; therefore, the ways to achieve this level is important topic of research. One of the possible approaches (Alegria and Bastarrica, 2006) is to take one CMMI process area at a time and search among Agile methodologies how this process area could be implemented. Another approach is to take one particular Agile methodology and determine a CMMI capability profile this methodology could assure. This paper is based on the second approach.

The goal of this paper is to assess DSDM Atern by CMMI-DEV and propose the improvement to reach CMMI maturity level 3. In order to have a more detailed view of CMMI coverage by DSDM Atern, the appraisal should be made according continuous CMMI model and then the resulting capability profile transformed to maturity level.

Peldzius and Ragaisis (2011) presented CMMI V1.2 and ISO/IEC 15504-5:2005 mapping; therefore, a CMMI target profile at hand can be transformed into the ISO/IEC 15504 processes capability profile. As the new versions of models CMMI V1.3 and ISO/IEC 15504-5:2012 have appeared, the new mapping is in progress. Such mapping allows to determine how DSDM Atern implements ISO/IEC 15504 processes.

This paper consists of 5 parts: background and related works, appraisal method, appraisal results, suggested improvements and conclusions.

1. Background and Related Works

A software process model defines the standard process that provides the basis for organization's process assessment and improvement. It should ensure the usage of the same concepts, relevance with the best software engineering practices and compatibility with internationally accepted standards. Software process modeling examines two aspects: the activities of software product development or services provision, and the soundness of the quality of these activities performing, i.e. ability to meet the defined schedule, cost, scope, and quality goals. The software process models summarize the best practices of software development and services worldwide.

All software process models could be classified according to their architecture (representation) into staged and continuous. The staged representation model is designed to provide the assessment of the maturity of an entire software process (organization). It defines the stages (maturity levels) with each serving as a required foundation for the next one. The organization's assessment result is a single rating (maturity level). CMMI defines 5 maturity levels: 1 – Initial, 2 – Managed, 3 – Defined, 4 – Quantitatively Managed, and 5 – Optimizing. The continuous representation model is intended for the assessment of the capabilities of each process area (named process), such as Requirements Development, Technical Solution, Configuration Management, etc. In this case, the assessment result for the organization is the capability profile consisting of capability levels for each named process so identifying most straggle named processes. CMMI V1.3 defines 4 capability levels: 0 – Incomplete, 1 – Performed, 2 – Managed, and 3 – Defined.

Older CMMI version (V1.2) defines two more capability levels: 4 - Quantitatively Managed, 5 – Optimizing. Generic goals and practices of levels 4 and 5 were eliminated as well as capability levels themselves to appropriately focus high maturity on the achievement

of business objectives, which is accomplished by applying capability level 1-3 to the high maturity process areas: Causal Analysis and Resolution, Quantitative Project Management, Organizational Performance Management, and Organizational Process Performance (CMMI Institute, 2010).

It was originally thought that CMMI and Agile methodologies are completely incompatible; however, a few years ago the first attempts to combine CMMI and Agile methodologies appeared (Alegria and Bastarric, 2006). In 2008, researchers from the SEI institute (CMMI developers) published an article (Glazer et al., 2008) confirming that CMMI can be used in conjunction with Agile methodologies.

Particular software development methodology can be extended, when the desired maturity level is not achieved. Manzoni and Price (2003) have published a study that was aimed at identifying what is needed to expand RUP for it to satisfy CMM maturity level 3. The study found that RUP cover CMMI process areas below 80% only in: Software Quality Assurance (69%) and Organization Process Focus (50%). Extensions have been proposed to improve coverage of these process areas. Current paper carries out similar work; however, it investigates DSDM methodology instead of RUP and more recent CMMI version.

In 2009, the question was raised whether a set of Agile methodologies can achieve CMMI maturity level 5 (Cohan and Glazer, 2009). However, this has not been accomplished yet. Moreover, taking a set of practices from diverse Agile methodologies and arguing that it meets a certain maturity level is mainly theoretical statement, because in practice companies adopt some specific methodology rather than taking pieces from different methodologies. However, such studies provide practical benefits and contribute significantly to the research of individual methodologies, since they present certain Agile practices, implementing some CMMI practices.

Dynamic System Development Method (DSDM) was introduced in 1995 along with other pioneers in Agile methodologies such as Scrum (1995), XP (1996), Crystal Clear (1996). In 2001, Agile Manifesto (Fowler and Highsmith, 2001) was released, which bounded all Agile methodologies to the same principles. DSDM is an iterative and incremental approach that embraces principles of Agile development, including continuous user/customer involvement. Free Agile methodologies gained more popularity over those years. So DSDM Atern, the latest version of DSDM, also became free to view and free to use in 2006.

DSDM Atern consists of iterative life-cycle, defined roles and responsibilities, set of principles and best practices that contain MoSCoW requirements prioritization and timeboxing, project and risk management, as well as other practices. A detailed DSDM Atern description can be freely viewed (on-line or printed version) in DSDM Atern Handbook, published by DSDM Consortium in DSDM Consortium (2008). Under DSDM Atern principles, the quality cannot be compromised, and this is ensured by means of DSDM Atern practices such as Deliver Quality, Planning, Testing, Configuration Management and others. DSDM Atern claims that "quality first" approach distinguishes it not only from traditional software development methodologies, but also from other Agile methodologies.

Over this time CMMI and Agile compatibility was re-evaluated, different approaches

were used to combine Agile methodologies and CMMI. Some of approaches, like SCRUM (Marcal et al., 2007; Jakobsen and Johnson, 2007) or XP (Omran, 2008; Paulk, 2001; Nawrocki et al., 2002) were extended to meet certain CMMI maturity levels; others combined and compared different Agile methodologies, mostly XP and SCRUM (Alegria and Bastarrica, 2006; Fritzsche and Keil, 2007). In 2005, Microsoft adapted its Microsoft Solutions Framework (MSF) For Agile (David, 2005) to CMMI level 3. As it was mentioned before, SEI (creators of CMMI) also published paper on CMMI compatibility with Agile (Glazer et al., 2008). All these successful investigations encouraged analyzing DSDM Atern and CMMI compatibility.

In order to use Agile methodologies in conjunction with CMMI, it is necessary first to understand that CMMI practices are recommendatory in nature. When assessing the process areas, it is enough to show that the goals of the process areas have been achieved (or have not been achieved). Practices offered by CMMI can be replaced with practices of Agile methodology, in this case DSDM Atern. Moreover, CMMI does not define the format in which process area results should be obtained, in other words, they do not necessarily have to be material. These features of the CMMI model allow combining it with Agile methodologies.

While CMMI evolved to version 1.3 the significant improvements were made in favor of Agile compatibility with CMMI (CMMI Product Team, 2010; CMMI Institute, 2010); organizational process definition was altered also high maturity levels were simplified. However, this paper mainly aims at CMMI level 3, leaving higher maturity levels for further investigation.

2. Appraisal method

The first step of appraisal is to define a method for it. Since CMMI has its own appraisal method called Standard CMMI Appraisal Methods for Process Improvement (SCAMPI), common sense tells us not to reinvent the bicycle, though literature studies show differently. SCAMPI A (SCAMPI Upgrade Team, 2011b) method has been chosen because it is Class A method and it satisfies all of the Appraisal Requirements for CMMI (ARC) (SCAMPI Upgrade Team, 2011a). Class A methods are the only methods considered suitable for providing ratings for benchmarking. SCAMPI A defines appraisal procedure, including rating scales for practices, goals, and capability level and/or maturity level. The rating scales are the most important when appraising the method. The appraisal procedure is simplified: appraisal has been performed on the basis of DSDM Atern documentation; it is assumed that an organization has implemented precisely all practices and principles defined in DSDM Atern.

Most of analyzed papers about CMMI and Agile use some their own appraisal methods (Jakobsen and Johnson, 2007; Paulk, 2001; Nawrocki et al., 2002). This has some strong arguments, because a methodology is appraised, not the actual organization. Lack of appraisal definitions is also observed in these papers, but altered scoring scales can be seen. In this paper we tend not to modify SCAMPI A too much, but some modifications in scoring scale were needed.

SCAMPI A scores for practices evaluation were altered. Score “Not Yet Implemented”

was removed, as it has no meaning for evaluation of the methodology. Scores "Fully Implemented" and "Largely Implemented" were merged to score "Enough implemented", while scores "Partially Implemented" and "Not Implemented" were merged to score "Not Enough Implemented". This leaves us with all needed information for method appraisal, as more detailed scores are unnecessary. Also it makes our appraisal method more simple and clear.

First of all generic and specific practices of the CMMI-DEV model were evaluated, then goals and finally - process areas. It should be noted, that SCAMPI A does not require satisfying all the practices in order to satisfy a goal. A goal can be reached by alternative implementation and expected elements of the model are more recommendation nature than essential. In this research only few of goals were reached by alternative implementation.

3. Appraisal Results

Appraisal results are shown in Table 3. Generic goal 1 is automatically satisfied, when all specific goals are satisfied in that process area. After evaluation of all specific and generic goals, process area is evaluated, capability level of process area is determined.

Abbreviations:

"SG" – specific goal, followed by goal's number;

"GG" – generic goal, followed by goal's number (capability level).

Possible scores:

"S" – specific or generic goal is satisfied;

"U" – specific or generic goal is unsatisfied;

"n" – generic goal is not rated (because GG 2 and GG 3 are automatically unsatisfied if GG 1 is unsatisfied);

"N/A" – particular specific goal does not exist in the process area.

"EI" – specific or generic practice is enough implemented;

"NI" – specific or generic practice is not enough implemented.

Generic goal 2 is satisfied, when all its generic practices are satisfied:

GP 2.1 Establish an Organizational Policy.

GP 2.2 Plan the Process.

GP 2.3 Provide Resources.

GP 2.4 Assign Responsibility.

GP 2.5 Train People.

GP 2.6 Control Work Products.

GP 2.7 Identify and Involve Relevant Stakeholders.

GP 2.8 Monitor and Control the Process.

GP 2.9 Objectively Evaluate Adherence.

GP 2.10 Review Status with Higher Level Management.

Generic goal 3 is satisfied, when all its generic practices are satisfied:

GP 3.1 Establish a Defined Process.

GP 3.2 Collect Process Related Experiences.

In order to achieve a higher capability level, process area must achieve generic goals of a

higher level by implementing corresponding generic practices. If at least one specific goal is not achieved, the evaluation of generic goals achievement for that process area becomes irrelevant and the process area automatically receives the lowest capability level. In this case, the evaluation of generic goals is not presented.

Examples of CMMI specific goals satisfied and unsatisfied by DSDM Atern are given in Tables 1 and 2 accordingly.

Table 1. Examples of CMMI specific and generic goals satisfied by DSDM Atern.

CMMI Risk Management Process Area	**DSDM Atern coverage**	**Score**
SG 1 Prepare for Risk Management	**DSDM Atern has strong risk management practices, risk identification, analysis and mitigation strategies. Risk management is an important practice in timely ensuring the quality of a product (the key principle of DSDM Atern). Risk management is mostly inherited from traditional methodologies.**	**S**
SP 1.1 Determine Risk Sources and Categories	DSDM Atern provides practices for risk source identification and risk categorization. DSDM Atern has strong practice to examine changing situation over time (it is one of the main principles in agile software development).	EI
SP 1.2 Define Risk Parameters	DSDM Atern suggests parameters to identify categories and assess risks. It is defined in DSDM Atern's Risk Management.	EI
SP 1.3 Establish a Risk Management Strategy	DSDM Atern defines risk management strategy, it defines how risks are to be organized, categorized, compared, and consolidated. DSDM Atern principles are to deliver high-quality products on time.	EI
GG 1 Achieve Specific Goals	**All specific goals of Risk Management are satisfied by DSDM Atern.**	**S**
GP 1.1 Perform Specific Practices	All specific practices of Risk Management are performed.	EI
GG 2 Institutionalize a Managed Process	**DSDM Atern institutionalizes Risk Management as a managed process by implementing all of the generic practices.**	**S**
GP 2.1 Establish an Organizational Policy	DSDM Atern establishes and maintains an organizational policy for planning and performing the process by practices: Project Management, Planning, Control in DSDM Atern Projects, Risk Management.	EI
GP 2.2 Plan the Process	DSDM Atern establishes and maintains project plan for every iteration (by Planning and Risk Management practices).	EI
GP 2.3 Provide Resources	DSDM Atern has strong Resource Management. DSDM Atern offers risk management and mitigation tools, as well as Modeling and Prototyping practices.	EI
GP 2.4 Assign Responsibility	DSDM Atern has strong roles system. Risk Management is the responsibility of a team leader.	EI
GP 2.5 Train People	DSDM Atern defines the required knowledge for every role. Training is carried out in meetings and by means of teamwork.	EI

CMMI Risk Management Process Area	DSDM Atern coverage	Score
GP 2.6 Control Work Products	DSDM Atern controls work products by Continuous Integration, Risk mitigation plans and Risk Management strategy.	EI
GP 2.7 Identify and Involve Relevant Stakeholders	Stakeholders are continuously involved in the project. It is a common Agile practice.	EI
GP 2.8 Monitor and Control the Process	DSDM Atern has Project and Risk Management planning. DSDM Atern has strong Quality Assurance. DSDM Atern has iterative process, so corrective actions are always performed during the next iteration. Project Management and Control in DSDM Atern Projects are also implemented during the DSDM Atern process.	EI
GP 2.9 Objectively Evaluate Adherence	During each iteration, work products are assessed in terms of business needs.	EI
GP 2.10 Review Status with Higher Level Management	DSDM Atern encourages Continuous Communication; all roles are included in the Risk Management.	EI
GG 3 Institutionalize a Defined Process	**DSDM Atern establishes and maintains the description of a defined process by establishing a defined process and collecting process-related experiences.**	**S**
GP 3.1 Establish a Defined Process	DSDM Atern has tools to establish a defined process, such as Measurement, Estimating and Delivering Quality practices.	EI
GP 3.2 Collect Process Related Experiences	Risk Management practice collects process-related experiences for the future use.	EI

Table 2. Example of CMMI specific goal unsatisfied by DSDM Atern.

CMMI Organizational Training Process Area	DSDM Atern coverage	Score
SG 1 Establish an Organizational Training Capability	**The goal has not been satisfied. DSDM Atern has no practices for organizational training; it suggests gathering teams that already have required skills instead. Some DSDM Atern practices can be considered as linked to training: continuous and clear collaboration, communication. DSDM Atern also provides the role of DSDM Atern coach, to ensure the implementation of a methodology.**	**U**
SP 1.1 Establish Strategic Training Needs	The role of DSDM Atern coach is intended for this task. This role operates in all stages of the project.	EI
SP 1.2 Determine Which Training Needs Are the Responsibility of the Organization	Not covered by DSDM Atern.	NI
SP 1.3 Establish an	DSDM Atern coach addresses training needs for different roles in the	EI

CMMI Organizational Training Process Area	DSDM Atern coverage	Score
Organizational Training Tactical Plan	project. It also addresses the required skills for the project.	
SP 1.4 Establish a Training Capability	Not covered by DSDM Atern.	NI

Maturity level 2 is achieved when all CMMI process areas of maturity level 2 (first 7 process areas in Table 3) reach capability level 2. Maturity level 3 is achieved when all CMMI process areas of maturity level 2 and 3 (first 18 process areas in Table 3) reach capability level 3. Bolded lines indicate the process areas that need major improvements in order to reach CMMI maturity level 3. All generic goals can be reached by similar approach and they are discussed in improvements section.

Table 3. DSDM appraisal results by achievement of specific and generic goals.

Process area (maturity level)	SG1	SG2	SG3	GG1	GG2	GG3	Capability level
Configuration Management (2)	S	S	S	S	S	U	2
Measurement and Analysis (2)	S	S	N/A	S	S	U	2
Project Monitoring and Control (2)	S	S	N/A	S	S	U	2
Project Planning (2)	S	S	S	S	S	U	2
Process and Product Quality Assurance (2)	S	S	N/A	S	S	U	2
Requirements Management (2)	S	N/A	N/A	S	S	U	2
Supplier Agreement Management (2)	**U**	**U**	**N/A**	**U**	**n**	**n**	**0**
Decision Analysis and Resolution (3)	**U**	**N/A**	**N/A**	**U**	**n**	**n**	**0**
Integrated Project Management (3)	S	S	N/A	S	S	U	2
Organizational Process Definition (3)	**U**	**N/A**	**N/A**	**U**	**n**	**n**	**0**
Organizational Process Focus (3)	**U**	**U**	**U**	**U**	**n**	**n**	**0**
Organizational Training (3)	**U**	**U**	**N/A**	**U**	**n**	**n**	**0**
Product Integration (3)	S	S	S	S	S	U	2
Requirements Development (3)	S	S	S	S	S	U	2
Risk Management (3)	S	S	S	S	S	S	3
Technical Solution (3)	S	S	S	S	S	U	2
Validation (3)	S	S	N/A	S	S	U	2
Verification (3)	**S**	**U**	**S**	**U**	**n**	**n**	**0**
Organizational Process Performance (4)	U	N/A	N/A	U	n	n	0
Quantitative Project Management (4)	S	U	N/A	U	n	n	0
Causal Analysis and Resolution (5)	U	U	N/A	U	n	n	0
Organizational Performance Management (5)	U	U	U	U	n	n	0

Appraisal has determined that DSDM Atern reaches CMMI maturity level 2, because all

CMMI process areas of maturity level 2, except SAM, have got capability level 2. It should be noted that Supplier Agreement Management process area is not mandatory because organizations could work without external suppliers. Thus, for such organizations SAM does not affect achievement of maturity level 2.

4. Suggested Improvements

Our goal is to stretch DSDM Atern to CMMI maturity level 3. In order to reach CMMI maturity level 3, all deficiencies mentioned in Table 3 must be eliminated. Improvements are based on other successful attempts to combine CMMI and Agile, Agile manifesto (Fowler and Highsmith, 2001), and of course DSDM Atern handbook (DSDM Consortium, 2008). The main problem is to maintain DSDM Atern's agility, while reaching CMMI maturity level 3. Improvements should follow Agile philosophy, to concentrate on people, but still establish managed CMMI process. Proposed improvements are described in the same level of details, as DSDM Atern is described in its whitepapers. Improvements cover specific and generic goals of CMMI levels 2 and 3. Higher maturity levels (4 and 5) do not have rigorously defined capability profiles.

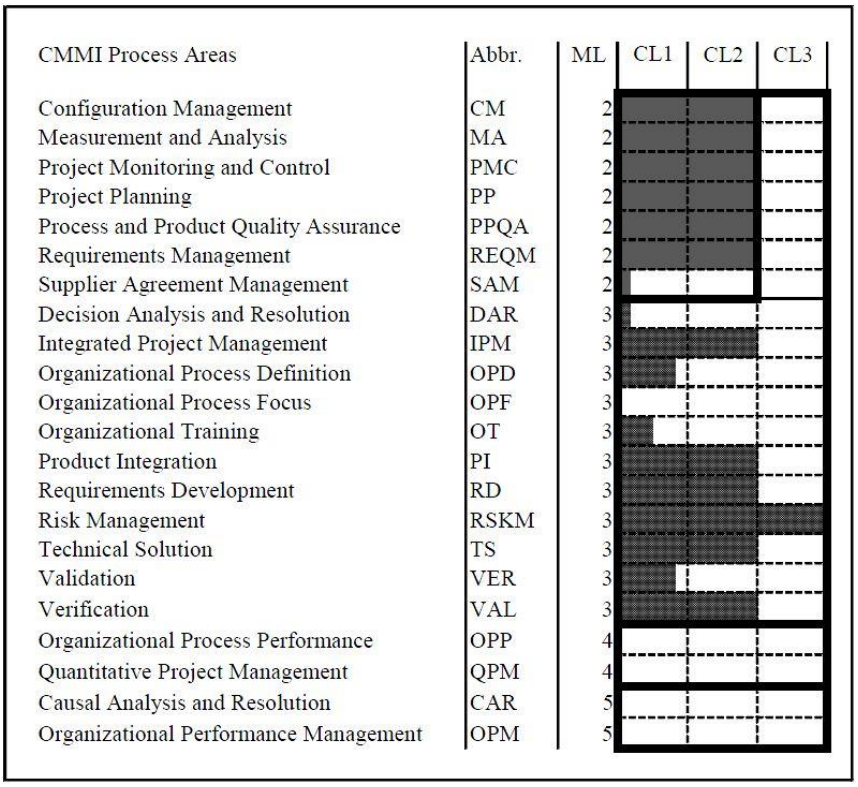

Figure 1. DSDM appraisal results by CMMI maturity levels.

In the process of achieving CMMI maturity level 3, the least covered process areas are from Process Management category. Organizational Process Definition (OPD), Organizational Process Focus (OPF), Organizational Training (OT) process areas are poorly covered by DSDM Atern. These results are not surprising, given the estimates of

other Agile methodologies. DSDM Atern does not define the Supplier Agreement Management (SAM); however, this not applicable process area never precludes the CMMI maturity level 3, because SAM is not necessary process area. DSDM Atern fails to meet Verification (VER) process area due to lack of clearly defined peer review. Decision Analysis and Resolution (DAR) from maturity level 3 is weakly covered by DSDM Atern.

Figure 1 presents the evaluation in accordance with process areas assigned to maturity levels. Highlighted frames indicate groups of process areas that are included in a certain maturity level and capability level that should be reached by the process areas.

It should be noted that 5 of 11 process areas of CMMI maturity level 3 received CMMI capability level 2, the implication is that specific goals of all these areas have been achieved but some generic practices of generic goal 3 have been not largely covered. Due to a weak implementation of organizational processes in the DSDM Atern methodology, the third generic goal has not been achieved.

A brief list of DSDM Atern deficiencies and suggested improvements was populated:

GG 2 is scored as "not rated" in some of the process areas (Table 3, lines in bold), because GG 1 is not satisfied. Not all specific goals of these process areas are satisfied. DSDM Atern has everything to satisfy GG 2 (institutionalize a managed process) in all process areas of maturity levels 2 and 3.

Supplier Agreement Management – not covered by DSDM Atern. This process area can be left uncovered, because not all organizations have suppliers; consequently CMMI allows reaching maturity level 2 and higher ones without having Supplier Agreement Management.

Causal Analysis and Resolution – not covered by DSDM Atern. DSDM Pre-project phase must be extended with alternative project plans. Final decision on which plan to choose must be made in Feasibility phase.

Organizational Process Definition – 5 out of 7 specific practices are covered. SP 1.5 Organization's process asset library and SP 1.3 Tailoring criteria and guidelines are missing. SP 1.5 and SP 1.3 practices must be added in responsibility of DSDM Atern Coach Role. This process area is much more compatible with Agile methodologies in CMMI V1.3 than in CMMI V1.2.

Organizational Process Focus – not covered by DSDM Atern. To cover this process area, organizational process must be planed, implemented and deployed. To maintain DSDM Atern agility, these tasks must be accomplished by DSDM Atern Coach Role. This process area can be planed implemented and deployed, just like any other DSDM Atern process, by using DSDM Atern supplied tools.

Organizational Training – 3 out of 7 specific practices are covered. Fully defined process area that covers all needed organizational activities is missing. No training records are created; no assessment of training effectiveness is made. DSDM Atern has some tools needed to extend to implement these deficiencies that can be used to fully cover Organizational Training. Some training activities, like facilitated workshops and meetings, are already covered by DSDM Atern.

Verification – this process area is almost covered by DSDM Atern, only peer reviews are missing. To cover it, pair programming practice can be "borrowed" from XP.

Defined process – generic practice for all CMMI process areas. Description of the

process that is tailored from the organization's set of standard processes must be established and maintained. Process related experiences must be collected. Most of this practice will be covered after Organizational Process coverage. Again, it must be DSDM Atern Coach's responsibility.

Conclusions

DSDM Atern ensures CMMI maturity level 2 at its original implementation. Mostly Organizational processes must be extended to reach CMMI maturity level 3. This could be achieved by expanding DSDM Atern Coach Role. This approach is agile, people orientated way to cover DSDM Atern deficiencies. Original DSDM Atern implementation has some pretty strong processes, especially in such areas as Risk Management and Configuration Management. It has most of the techniques needed to accomplish these tasks.

It is important to declare that not only new Agile methodologies are developed in the way to minimize conflict with CMMI, but also CMMI V1.3 offers more flexibility dealing with Agile methodologies, compared with older versions of CMMI.

DSDM Atern could be recommended for organizations seeking CMMI maturity level 2. But if an organization has targeted CMMI maturity level 3 it should employ additional means, for example, additional techniques proposed in the paper.

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Santrauka

Įmonėms svarbu žinoti, kokį gebėjimo/brandos lygį gali užtikrinti, pasirinkta programų kūrimo metodika. Šiame straipsnyje analizuojama DSDM Atern metodika ir jos užtikrinamas gebėjimas/branda pagal CMMI. Tikslas – įvertinti DSDM Atern pagal CMMI-DEV 1.3 versiją ir pasiūlyti DSDM Atern papildymus, leisiančius pasiekti CMMI 3 brandos lygį. Sudarytas DSDM Atern gebėjimo profilis. Atlikus vertinimą, paaiškėjo, kad DSDM Atern užtikrina CMMI 2 brandos lygį. Nustatytos DSDM Atern proceso sritys, ribojančios proceso brandą, vertinant pagal CMMI. Parengti DSDM Atern papildymai, leidžiantys pasiekti CMMI 3 brandos lygį.

Pagrindiniai žodžiai: CMMI, DSDM Atern metodika, Agile metodo galimybių vertinimas, CMMI ir Agile suderinamumas.