



Egypt-SPIN Newsletter

Issue 14, Apr. – Dec., 2006

Sponsored by SECC

From the Editor (Ahmed S. El-Shikh)

Welcome to our 14th issue of Egypt –SPIN newsletter. In each issue we are trying to put together relevant information in the form of articles and recaps from the previous 9 months events hoping to provide our members of Egypt – SPIN with information to support their current interests.

We are used to announce about the major events happened in Egypt, in the field of process improvement, between two successive issues of the Egypt SPIN newsletter. The time gap between this issue and the previous one was a bit long, around 9 months instead of 3, due to some out of control conditions. Hope that you accept our apologies.

At the same time, it is a pleasure to announce many success stories and great achievements that have happened during that long period of time.

Actually, we will not be able to mention in details, due to size limitation, all of the events that we can consider, with high level of confidence, as major milestones in our process improvement journey. Please, refer to SECC website, www.secc.org.eg, for more information. Here, you can find a summary list of the most important events:

- **1st Quarter of 2006**
 - SECC became an SEI Strategic Partner for delivering SEI official “Introduction to CMMI” training course and SCAMPI services.
 - SEI official “Defining Software Process” course was conducted in Cairo.
- **2nd Quarter of 2006**
 - SEI official “High Maturity with Statistics” course was conducted in Cairo.
 - Contact Center Certification Project started using “Customer Operations Performance Center (COPC)”.
- **3rd Quarter of 2006**
 - SECC held a launching ceremony to inaugurate its new “Embedded Software Development Unit”.
 - Four Egyptian companies achieved CMMI ML 2 and other four achieved ML 3 as a result of the SECC/IMC-1 Project for CMMI.
 - SEI official “Measuring for Performance Deriving Improvement-1” course was conducted in Cairo.
 - SECC organized 2 rounds of SEI official course entitle “Introduction to CMMI (Staged and Continuous)”. The second round was conducted by 2 Egyptian SEI Authorized CMMI Instructors.
 - One Egyptian company achieved CMMI ML 3 and another one ML 5.
- **4th Quarter of 2006**
 - SPIG Product Suite v1.1 has been released.
 - The first ESI (European Software Institute) training course in Egypt entitled “Reuse Based Training” was conducted in Cairo.
 - SECC participated in GITEX 2006.
 - SECC became an SEI Strategic Partner for delivering SEI official “PSP/TSP” training courses and “TSP Coaching” services.
 - SECC held SECC/IMC-2 Project for SMEs official closure ceremony.

This issue introduces some hot topics in two series and three independent articles as follows: experience with implementing CMMI ML3 (1st article), explanation of CMMI ML3 process area (2nd article), security requirement in virtual environment, implementing COPC in Egypt and using open source tools to build version controlling environment (3rd, 4th and 5th articles respectively).

Eng. Ashraf Rizkallah & Eng. Nermine A. Faltas share their experience in **achieving CMMI ML 3** in the software development department, LINK Devolvement, in LINKdotNet. The company was one of the beneficiary companies in the **SECC/IMC-1 Project for CMMI** that has been closed in July 2006.

Eng. Manal Helmy completes the **series for explaining CMMI Process Areas**. The series started after the first round of the SEI official “Intermediate Concepts of CMMI” course that had been conducted in June, 2005 at Cairo, Egypt. The article explains the **verification process area** in ML 3.

Eng. Ahmed Gad Al-Karim completes his **series to discuss Security in the Virtual Environment**. His article is the second part of the discussion about the **information security requirements**.

Ms. Sherine FaragAllah discusses SECC project called “**Contact Center Certification Project**”, which helps the providers of Customer Contact Center and Business Process Outsourcing services in Egypt. The project used the **Customer Operations Performance Center (COPC)** as the world's leading authority on operations management and performance improvement for buyers and providers in this sector.

Eng. Ahmed M. Hammad discusses the importance of **version controlling** in software projects. He shares his experience in building a **multiplatform environment for version controlling** using open source tools.

We hope we succeed to give you an idea about what is going in our community. Please write to the editor your comments about our progress. We always ask you to submit short articles for publication that deal with your experience in defining, developing and managing software efforts as well as process improvement experience. Remember that our goal is to encourage an interchange between our readers. You can email spin@secc.org.eg or aselshikh@mcit.gov.eg

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LINKdotNET Experience with CMMI Level 3

By: Ashraf Rizkallah & Nermine A. Faltas

Introduction

LINKdotNET, the leading privately owned Internet service and solutions provider in Egypt and the Middle East, combines comprehensive industry knowledge with technical know-how to deliver cost-reducing and revenue-raising e-solutions based on the latest technologies through its industry-leading development house, Link Development.

LINKdotNET continuously drives process improvement to deliver high quality solutions to benefit its customers. For that, we believe that quality is a journey not a milestone. CMMI was not the beginning; it is just another milestone on the quality journey of LINKdotNET. History of process improvement includes the achievement of the ISO 9001:2000 certification in June 2004.

ISO 9001:2000 helped us to develop a complete QMS system that drives continuous improvement. LINKdotNET aimed at further improvement to a model that focus on software development and includes advanced practices to its engineering processes and organizational processes.

CMMI was the most suitable quality model because it focuses on Project Management, Engineering & Organization wide development.

In this article, LINKdotNET will share its experience and lessons learned in the journey of software process improvement to achieve high maturity levels.

We will share our experience in joining the CMMI program provided by SECC and IMC. We will also demonstrate our best practices and the golden keys to help other IT companies in their quality journey.

The CMMI Program Experience

Actually, achieving CMMI Level 3 in 12 month was a real challenge. However, the CMMI program with the professional consultant and its defined milestones was organized with level of proficiency to assist companies very closely and to push companies forward to achieve their goal.

The CMMI program has included the following milestones:

- o CMMI Processes Training
- o Performing a gap Analysis and preparing an action plan
- o 5 follow-up visits to provide Consultations and action plan monitoring
- o Conducting the Pre-appraisal.
- o Conducting the Formal Appraisal

First, conducting a gap analysis by a qualified consultant was very valuable to LINKdotNET.

Gap analysis aligns the consultant findings with LINKdotNET findings and its improvement roadmap that was developed after ISO certification. This gives a common vision between the consultant and the company and confirms our quality objectives.

Furthermore, having an action plan with well defined milestones pushed us

to have a very clear roadmap. Action Plan addresses filling the gaps in a well defined order to achieve optimum results in a limited time.

With this roadmap, you can work on your weakest gaps improve them and go on with less severe gaps. Also having specific goals to achieve at each milestone facilitate monitoring on both parties.

During our journey for achieving level 3, the consultant visits were very constructive. In each visit we get the "HOW TO" experience and on the job training which facilitates our job and kept us always focused.

Having different consultants in the one day spot check and the appraisals was very useful to have variety of experiences and perspectives of different experts which expand our quality viewpoint and horizon.

The final findings at the end of the formal appraisal are now our starting improvements for higher maturity levels.

Now, we will share with you some golden keys that we have collected during our journey.

Sponsorship

Involvement of the senior management is the first key to PI. Senior manager should set the organizational quality goals, provide resources and funds, review progress, resolve conflicts, contain employee fears and encourage the PI environment.

As we have learned from Quality models and from experience, if you find your senior management not committed to process improvement, you will have very small chances to make it.

Training

Training is the second key in our journey and golden key in achieving any success. Training has been conducted at different levels: project managers, quality engineers, development engineers and also training for the EPG. Trainings are focused on our defined processes, tools, and techniques.

Training is not only a formal one, training also was on the job training and assistance, mentoring to help everyone in the organization masters the implementation of the processes they are involved in.

Release your Process early and improve as you go on

One of the pitfalls that some companies go through is "finalize the entire process first". Our key here is: "don't hold your process, put it simple, release your process and improve as you go on".

First, all stakeholders will see and feel the change and experience implementation. This is a very important milestone. Then, improve, and improve your processes. For level 3 those improvements implementation will be very good evidence to all organizational processes.

Second, when you put it simple, all the stakeholders will digest it with minimum resistance.

Third, when you release it, you will have up and running processes that people can work on.

After that you can evolve your process based on realistic situations. But keep in mind that changing the process too fast will confuse people

and increase the resistance to change. So, keep the speed reasonable.

Let your QA be ready for the challenge

If you have a great Engineering Process Group (EPG), a perfect process improvement plan and ideal processes without a QA involved from the beginning, your chance for improvement will be very poor.

QA is the keystone in your journey; this group will support the process improvements (PI), assist and train the stakeholders. So, build the QA team from the beginning, train them and involve them in the process improvement to be ready.

Involve People in PI

If you could involve all the company in your PI project, do it.

Make a shared vision and a single goal to all the people "Quality is our target" Involve project managers, technical people, quality assurance, quality control ...

First, you will have different aspects that can enrich your PI. Second, this will diminish the resistance to change. Third, by time and while practicing, all these people will become more mature. This will help you in achieving high maturity targets.

Implement improvements suggested by employees and give them feedback to continuously have their buy in. Also, it is a good practice to choose reluctant people to train others!!

Automate whenever you can

Automate any part of the process whenever you can. If you don't have a

sufficient budget, you can use open source tools or develop small tools.

Tools will facilitate your work, standardize the process, reduce headache and eliminate time consuming tasks.

Make a single team with different perspectives

Encourage the team-work spirit between the QA & EPG from one side and the other stakeholders from the other side. QA is not for auditing and reporting non-compliance.

QA and EPG must support, assist & train people on the process and work with the other stakeholders to achieve the quality objectives. This team spirit will absorb the resistance and increase the efficiency.

Select YOUR measurements

While developing your process, don't take the common known measures. Keep these measures in your mind and select YOUR OWN ones. Find a good answer for these questions: Why do I need this measure, how I will use it, how I will analyze and use it for continuous process improvement

Conclusion

Achieving CMMI level 3 was not our only target, even achieving level 5 will not be the end, and it is a "Continuous Quality Journey".

"This is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning".

**Sir Winston Leonard
Spenser Churchill**

Biography

Ashraf Rizkallah is the Process Improvement Leader at LINKdotNET. Ashraf has graduated from Computer and Systems, Ain Shams University. Ashraf has 8 years of experience in Software Development and 3 years in the process improvement field. Ashraf has passed the "Intermediate Concepts of CMMI" Course in 2005.

Nermine A. Faltas, Quality Manager at LINKdotNET 2001, is responsible for product quality, process quality assurance, and process improvement. Nermine has graduated from the AUC with CS major and Economics minor in 1995. Nermine has been working for LINKdotNET for 10 years working in Software Engineering, Project Management, and finally in Quality Management.

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CMMI Process Areas Explanation Series: Verification in Software Development

By: Manal Helmy

Introduction

"The problems that we are facing cannot be solved at the same level that created them".

We should have an enormous change to our mind set in order to be able to solve our problems of how to deliver our projects with all specified requirements Met , within time ,and within budget . We should also decide that No step forward before making sure that the previous step has been verified.

VER is the verification process area which is considered one of the process areas of CMMI L3 and is categorized under the engineering processes.

Verification of work products substantially increases the likelihood that the product will meet the customer, product, and product-component requirements.

Verification addresses whether the work product properly reflects the specified requirements. In other words, verification ensures that "you built it right".

Peer reviews are an important part of verification and are a proven mechanism for effective defect removal. An important corollary is to develop a better understanding of the work products and the processes that produced them so that defects can be prevented and process improvement opportunities can be identified.

Senior managers ranked peer reviews as the significant enabler of software product quality among all key process areas.

{ Johnson/Brodman 96 }

Examples of peer review methods are the Inspections and the structured walkthroughs.

Benefits of verification

- o Increases the likelihood that the product will meet the customer requirements.
- o Provides early detection of defects which minimizes the rising cost of defects and decreases the rework.

The cost of defects rises along the project life cycle the relative cost of correcting a design or code defect as \$1 if it was found during an inspection, \$13 during system test and \$92 after delivery (Paulk et al. 1995) the figure below shows how the cost of fixation increase as we progress in the development phases.

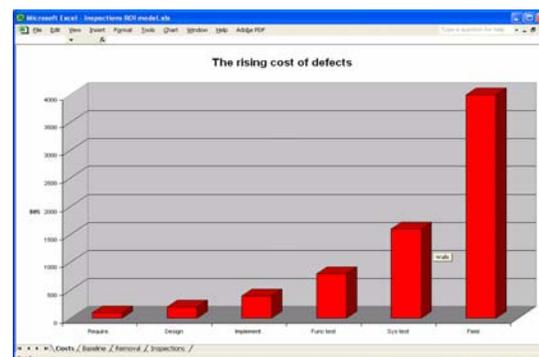


Figure 1: Cost of defect removal

A study for the return on investment for the inspection process for a project size of 7690 LOCs with a defect

density of 60 per KLOC gives a total defect of 586 defects.

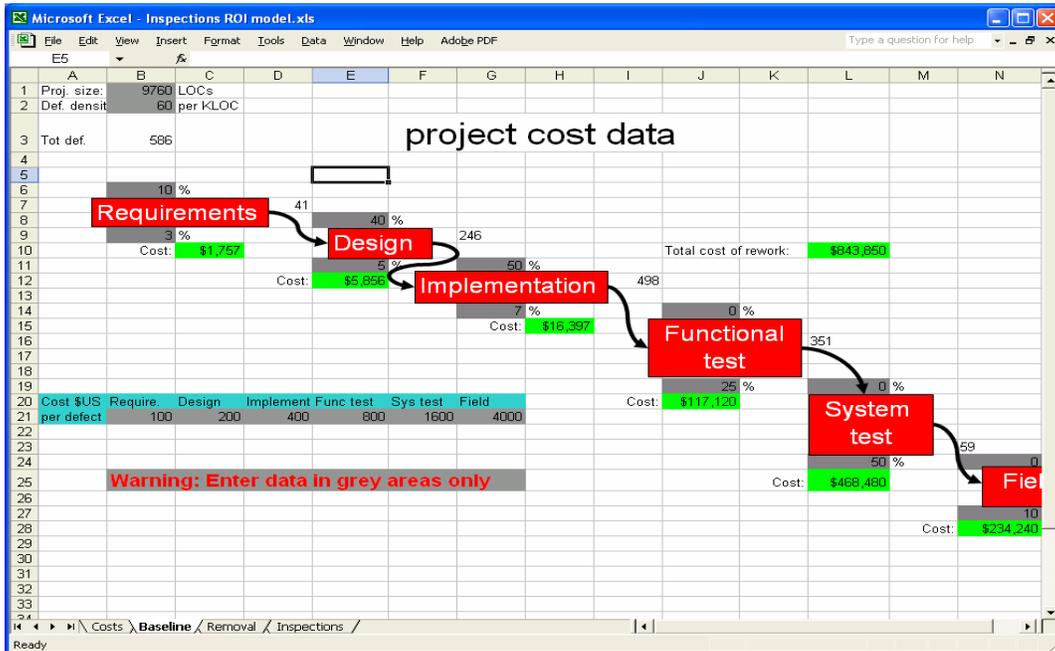


Figure 2: Cost of rework without Software Inspections

The total cost of rework without any inspection is 843,850

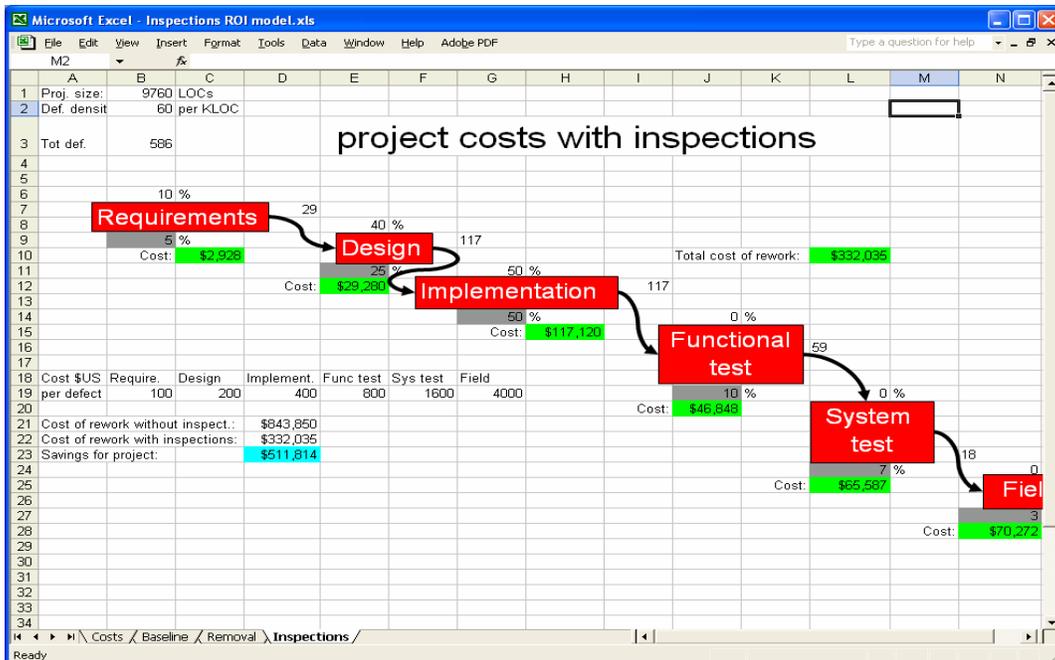


Figure 3: ROI for Software Inspections

The total cost of rework with inspection is \$332,035. Total saving cost for project \$511,814.

The Verification process area involves the following:

- Verification preparation
- verification performance
- Identification of corrective action

Verification Preparation

- This phase enables the identification of the work products to be verified, Work products are selected based on their contribution to meeting project objectives and requirements, and to addressing project risks, the methods to be used to perform the verification for each selected work product, and the requirements to be satisfied by each selected work product.
- Establish the Verification Environment by determination of the environment that will be used to carry out the verification.
- Establish Verification Procedures and Criteria that are aligned with the selected work products, requirements,

methods, and characteristics of the verification environment.

Verification Performance

The Verification Performance conducts the verification according to the available methods, procedures, and criteria

Identification of Corrective Action

All available verification results are incrementally analyzed and corrective actions are initiated to ensure that the requirements have been met.

Planning for reviews

If you don't plan reviews as project tasks and allocate resources, they can appear to slow the project down, Incorporate formal reviews into the project schedule or work breakdown structure. A well defined software development lifecycle itemizes specific exit criteria for key phase deliverables, including passing an appropriate type of review.

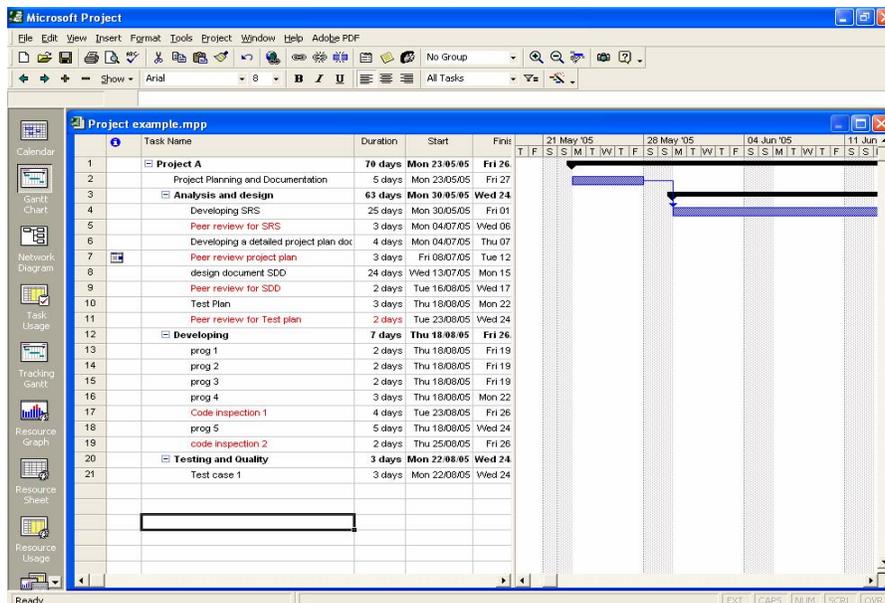


Figure 4: Incorporating the verification tasks into project plan.

Analyze the verification data on defects and Record all results of the analysis in a data base which will enable producing different types of reports .

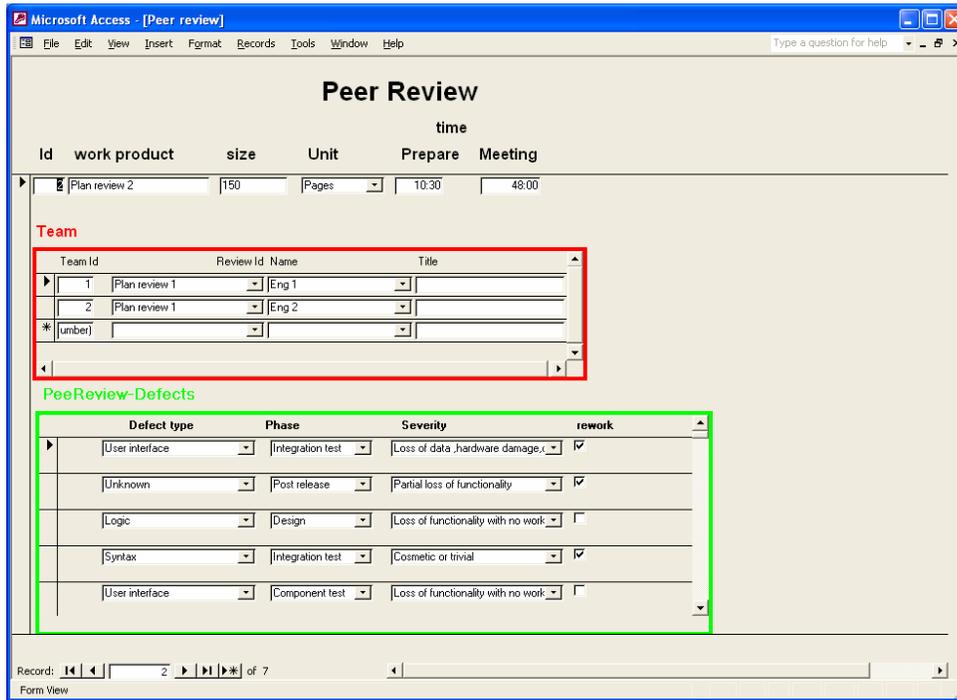


Figure 5: Analyzing verification data

We will need a repository in which to store our data , along with query ,reporting and charting tools to monitor averages and trends in the metrics for a series of data.

Use verification results to compare actual measurements and performance to technical performance parameters.

Defects by category

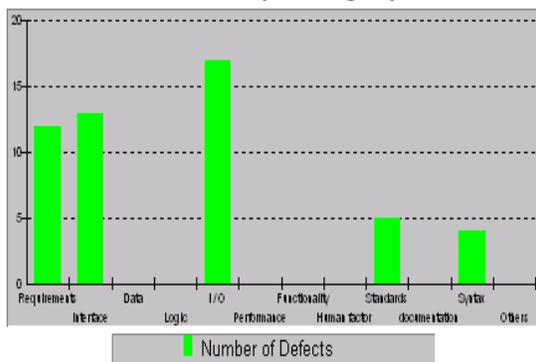
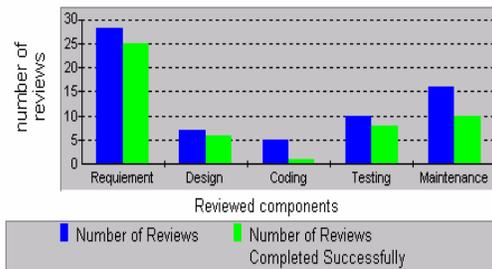


Figure 6: Defects by category

Number of peer reviews by reviewed component



Number and severity of defects

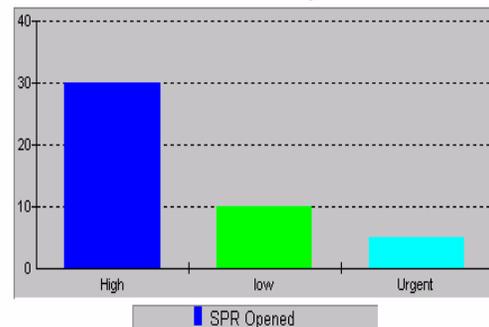


Figure 7: Analysis results

Biography:

Manal Ahmed Helmy, is a Software process improvement consultant at SECC. She got her B.Sc. in Computer Engineering from the Faculty of Engineering, Ain Shams University, Cairo (Egypt). She has over 15 years of experience in information technology. She has the "NCC" certificate in structured design and analysis and experience in quality management systems. She is a certified quality analyst "CSQA". Provide Consultation for Process improvement initiative based on SE/SW-CMMI. Participating in the projects for process improvement in Egypt helping the companies in getting CMMI certification through gap analysis, consultation visits and formal SCAMPI appraisal class "A". She is an SEI authorized instructor for "Introduction to CMMI", Six sigma certified green belt and preparing for the black belt.

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Information Security in the Virtual World Series: Information Security Requirements (Cont.)

By: Ahmed Gad Al-karim

As mentioned in the last article, the overarching security policy has three primary goals: to ensure the availability, integrity, confidentiality, and assurance of an organization's information assets. Also, in the last article we talked about some basic concepts about the authentication and authorization processes as two major components/ functional processes. In this article, we will elaborate more on the previously mentioned processes and take two examples of their implementations:

1. An introduction to the encryption services as an example of the authentication mechanisms. A user to log on to a domain or to make internet transaction, is to present his smart card or smart token with underlying encryption level, as a method of authenticating him. The encryption also has other goals, such as confidentiality, and non-repudiation, message integrity I will elaborate more when dealing with Encryption and digital certificate services.
2. An introduction to the access control list as an example of the authorization mechanisms. I will elaborate more when dealing with directory services.

Encryption Services

Cryptography means "hidden writing", and various forms of hidden writing have been used throughout history. One of the main goals of cryptography

is to communicate with another party in such a way that if anyone else is listening, they cannot understand what you are saying. So, in its most basic form, cryptography garbles text in such a way that anyone that intercepts the message cannot understand it. To address user confidence for secure information exchange, a method based on encryption technologies, has emerged as the preferred means to meet such demands. To meet user confidence an IT infrastructure must provide the following key factors:

- o **Confidentiality:** the data can only be decrypted by the intended recipient.
- o **Authenticity:** the data can only have been sent by the originator.
- o **Integrity:** the data had not changed during transmission.
- o **Non-Repudiation:** the originator of the data can not deny it was sent.

Encryption or **Encryption Algorithms** are used to code a message in such a way that its meaning is concealed. Once a message has been transformed with an encryption algorithm, the resulting message is called **cipher text**. Since cipher text contains a message in its encrypted form, the message does not "mean" anything, since it cannot be read in its native form.

In order for the recipient of the cipher text to be able to read the message, they need to **decrypt** the message.

Decryption is the process of transforming an encrypted message

back into its original **plaintext** form. This is shown in the following figure.

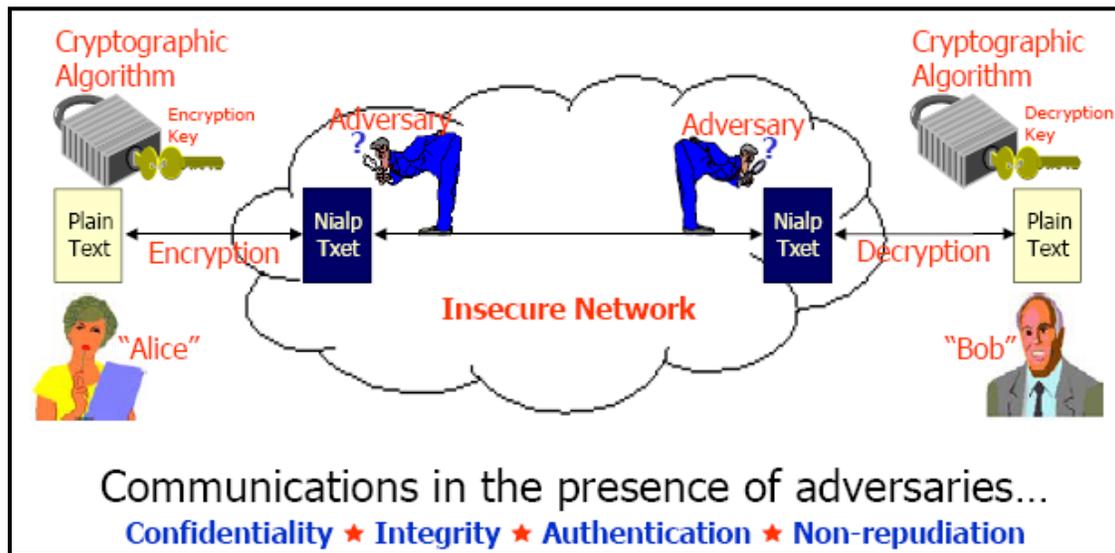


Figure 1: Encryption / Decryption cycle

Cryptography is one of several technologies that are absolutely essential for the successful deployment of e-commerce systems, especially those that operate over the Internet. In particular, cryptography helps to assure the customer that:

- They are communicating with the correct server.
- Their messages are being delivered exactly as sent.
- They can prove that they sent the message.
- Only the intended receiver can read the message.

Similarly, crypto helps assure the e-commerce vendor that:

- They are communicating with the right client.
- They can rely on the integrity of the contents of the received message.
- There is no question about the identity of the sender.

- Only the individual purporting to be the author could have sent the message.

Although not directly related to crypto, cryptography also helps the sender and receiver (e.g., customer and vendor) ensure, guarantee, and acknowledge message delivery.

Types of Cryptosystems:

1. **Secret key encryption:** is also called **symmetric encryption**. This means that a single key is used for both encrypting and decrypting the data. So the sender and receiver of the encrypted message would need to have the same key prior to communication.
2. **Public key** or **asymmetric encryption**, there are actually two keys involved: one for encrypting the message and one for decrypting the message. So now the sender and receiver do not have to have the same key prior to

communicating. One thing to remember is that public key encryption is much slower than secret key encryption.

3. The third type of encryption is called a **hash**, which is a one-way transformation of data that is irreversible. Once the data has been encrypted, there is no way to decrypt it. As you can see, this type of encryption is very useful for password encryption and will be covered in more detail in the password cracking module.

Many security protocols make use of the above mentioned cryptosystems. For example, Secure socket layer (SSL) for encrypting internet HTTP traffic, IPsec for encrypting virtual private network (VPN) connections, and S/MIME protocol for encrypting e-mail messages.

Access control List

It's a list of entries containing zero or more access control entries that identify the who has access to a certain object. It may be one of the following:

1. ACL on the network perimeter router that identifies who as allowable to access in or out the network. Thus filtering the incoming or outgoing traffic.
2. ACL roles on the perimeter firewall for advanced access to the underlying network.
3. ACL on operating system that specifies the privileged levels on OS objects (e.g. files, folders, registry keys...etc)
4. It may be integrated in a whole identity management solution for enterprise networks.

For example, in Windows environment, The ACL may be:

1. Discretionary ACL which is used for controlling access to an object.
2. System ACL for creating audit logs when an object is accessed.

Another example is in Cisco routers. Cisco IOS (operating system) uses access lists to separate data traffic into that which it will route (permitted packets) and that which it will not route (denied packets). Secure configuration of Cisco routers makes very heavy use of access lists for restricting access to services on the router itself as well as for filtering traffic passing through the router. Sites will implement router ingress and egress filter ACL based on a policy of **Deny by Default**.

Several ports and network services may be restricted by source or destination address. Connections initiated by clients from external networks for services such as http, dns, smtp, and ftp must be restricted to only those servers residing in the DMZ or service network.

There are two types of ACLs on Cisco routers:

- o A standard access control list performs very limited filtering of packets. With standard ACLs you can deny or allow traffic based on the source IP address of packets. In Cisco IOS every ACL must have an ID, and the ID number can tell you the type of access list you are working with. If the ID is between 1 through 99, then it is a standard ACL.
- o An extended ACL has an ID between 100-199 and allows

you to perform more advanced filtering. You can now check both the source and destination IP addresses and also filter on information that resides in the TCP header. Information like ports and flags like SYN and ACK can also be filtered on to limit whether new sessions can be established or only established sessions are permitted. With extended ACLs, you can not only permit traffic but also deny traffic based on a variety of parameters.

We will elaborate more on the technical aspects of ACL configuration in the coming articles. For more information regarding ACL configuration, please refer to www.cisco.com

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Biography

Ahmed Gad Al-Karim, is a security and infrastructure consultant in the Egyptian e-Gov Program. He has 7 years of experience in the field of information technology. Currently, he holds Techno-MBA. Information security is his major interest. His interests include ISO 17799, BS 7799 security systems.

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Contact Centers Certification Project

By: Sherine FaragAllah

Executive Summary

The strong IT industry and technical skills found in Egypt are among the best in the world. The Egyptian government's support represents a major factor as it has done tremendous progress in improving the business environment in terms of labor law, customs regulations, incentives and tax reforms. Also, the Ministry of Communications and Information Technology took the responsibility of facilitating Egypt's transition into the global information society. The Ministry realized its objectives of building both an information society and a vibrant local ICT industry that fosters export growth.

Egypt is rising as a key offshoring competitor, thanks to the various factors have contributed in positioning Egypt among its peers in the international arena. Investors, vendors and experts are in close agreement regarding its strengths. Egypt has been ranked as #12 worldwide on the 'Kearney Outsourcing Index' 2005..

Egypt offers a wide pool of language capabilities thanks to the long-established educational institutions. The spoken languages in Egypt are reputed to be accent- neutral. The fact that enables Egypt serves countries effectively, where offshoring has become a political issue. Egypt's geographic location is another major factor that adds key strengths and qualifications to Egypt. It offers it several advantages in terms of time-zone, easy accessibility and cultural capability.

The work force in Egypt enables it feed the call centers. Wage rates for IT specialists and contact/ call centers

representatives are low compared to other counties.

Introduction

Software Engineering Competence Center (SECC) is one of the prestigious and powerful associations in the information and communications technology field in Egypt. It is also an extremely important organization that cooperates with the Ministry towards achieving its goals. SECC supports the Egyptian software industry through its continuous efforts in developing this sector and raising it up to the level of international competence.

SECC is able to make significant achievements primarily in adopting standards, promoting professionalism, raising awareness and working with businesses towards adopting state of the art methodologies and better practices.

Consequently, it has been given the mandate by the Ministry of Communications and Information Technology to develop the capacities and performance of contact/ call centers operating in Egypt. The aim of the project is to help contact/call centers compete worldwide, increase their revenue sharing and competitive edge; as well as improve their quality of services to ensure customer satisfaction.

SECC found that the best model to be used is the Customer Operations Performance Center (COPC). COPC is the world's leading authority on operations management and performance improvement for buyers and providers of Customer Contact Center and Business Process Outsourcing (BPO) services.

On July 19th, 2006, SECC held a seminar on "Contact Centers Certification Project", under the auspices of H.E. Dr. Tarek Kamel – Minister of communications and Information Technology at the Marriott hotel. Three contact/ call centers in Egypt The event was attended by H.E. Dr. Tarek Kamel, approximately 200 representative from contact centers operating in Egypt, IT companies, prominent figures, as well as MCIT, ITIDA and SECC staff. The seminar aimed at highlighting the support that SECC would provide in certifying contact centers through Customer Operations Performance Center (COPC), where SECC will be the managing, monitoring and supervising entity.

As a result of this seminar, a number of contact/ call centers were interested in participating at the project. SECC, ITIDA and COPC, then formed a committee to choose the three contact/ call centers to obtain the COPC certification. The committee chose C3, ECCO and Mobinil based on their interests in the certification.

Contact Centers Certification Project

- Importance of COPC-2000® CSP Standard
- Project Phases

Importance of COPC-2000® CSP Standard

The COPC-2000® Standard is a Performance Management Framework delivering results in all contact center operations, especially in Call Centers, E-Commerce Centers and Transaction Processing Operations. It is relied on worldwide as a valued strategy for implementing contact center best practices that improve performance in

customer satisfaction and service, inbound and outbound sales, service dispatch, collections, retention, remittance processing, fulfillment, and other service operations. Certification to the COPC-2000® CSP Standard ensures the Performance Management System is installed, implemented, and producing results.

Project Phases:

Phase 1: Management Awareness Workshop:

SECC held a one- day Management Awareness Workshop on July 26th, 2006 at its premises located at the Smart Village, aimed at senior managers within the contact/call centers operating in Egypt.

The workshop was conducted by Dr. Richard North – Managing Director of Customer Operations Performance Center (COPC) –Europe. Twenty seven participants attended the workshop which was very successful.

The aim and content of this seminar was:

- Provide an in depth review of the COPC management framework and what being COPC certified means
- Explain the benefits of being COPC certified
- Describe the COPC certification process and the roles and responsibilities within COPC and the Certification Candidate
- Explain in greater detail what is involved in certification and what is expected from candidates

Phase 2 : Registered Coordinator Training

Each contact/ call center applying for certification must have at least one COPC registered coordinator. COPC delivered a 5 day Registered Coordinator class on September 10th-14th, 2006 in Cairo. This class was held collectively to both the participating contact/call centers in the project and the interested ones in applying to this program next year. Twenty three attendees belonging to twelve contact/ call centers participated at the class.

Phase 3: Certification Process

There are three major parts to the certification process:

- **Baseline Audit:** This is a week long audit of each center. COPC will at the end of each audit provide the center with an assessment of its status with regards to certification as well as how it compares to our benchmark database built from over 800 Client site audits.
- **Structured Support:** Provision of structured support for each participating center. This allows for 6 months of support per center
- **Certification Audit:** When the center is ready COPC will conduct a certification audit for each center.

Cost Sharing and Registration

Cost Sharing

The total cost of certifying each contact/ call center is USD 100,000.

- ITIDA will subsidize 90% of the total cost.

- Each center will pay the remaining 10%.

Registration

For contact centers interested in joining the above project, they can fill in the Registration Form (Word or PDF) posted on SECC website: www.secc.org.eg and send it via E-mail, or Fax as follows

Attention:

Ms. Sherine FaragAllah
Business Development
Specialist
Tel: 202-5345000
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sfaragallah@mcit.gov.eg

Biography

Sherine FaragAllah is a business development specialist at SECC. She obtained her bachelor degree in Journalism and Mass Communication from the American University in Cairo in 2000. She worked at Commercial International Bank – Credit Department for four years. She, then, started working at the IT sector in December 2004.

Feedback contacts

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Software Version Control

By: Ahmed M. Hammad

Software Configuration Management (SCM) in Roger Pressman book Software Engineering: A Practitioner's Approach, says that software configuration management (SCM) is a "set of activities designed to control change by identifying the work products that are likely to change, establishing relationships among them, defining mechanisms for managing different versions of these work products, controlling the changes imposed, and auditing and reporting on the changes made.". In other words, SCM is a methodology to control and manage a software development project.

SCM concerns itself with answering the question: somebody did something, how can one reproduce it? Often the problem involves not reproducing "it" identically, but with controlled, incremental changes. Answering the question will thus become a matter of comparing different results and of analyzing their differences. Traditional CM typically focused on controlled creation of relatively simple products. Nowadays, implementors of SCM face the challenge of dealing with relatively minor increments under their own control, in the context of the complex system being developed.

A corner stone tool to start with is the revision control system, so in this article we will focus on it and explain its installation and configuration.

Revision control - also known as version control - is the management of multiple revisions of the same unit of information. It is used to manage ongoing development of digital documents like application source code, art resources or design and

architecture documents. Changes to these documents are identified by incrementing an associated number, termed the "revision number" and associated historically with the person making the change. A simple form of revision control, for example, has the initial issue of a drawing assigned the revision number "1". When the first change is made, the revision number is incremented to "2" and so on.

Software tools for revision control are increasingly recognized as being necessary for software development projects, not to manage only source code, but also for all software artifacts.

We introduce one of the best revision control system, Subversion, and will make guidance on how to install, configure and use effectively. In general use subversion –SVN – to control any document, which is text based or even binary files, in the case of text files you will be able to use tools to show revisions differences.

Subversion Basic Features

- Open source. Being open source does not mean low quality; it is a commercial quality system.
- Multiplatform, Windows, Linux, and many other.
- Commits are truly atomic operations. Interrupted commit operations do not cause repository inconsistency or corruption.

- o Renamed/copied/moved/removed files retain full revision history.
- o Directories, renames, and file metadata are versioned. Entire directory trees can be moved around and/or copied very quickly, and retain full revision history.
- o Native support for binary files, with space-efficient binary-diff storage.
- o Apache HTTP server as network server, WebDAV/DeltaV for protocol. There is also an independent server process that uses a custom protocol over TCP/IP.

- o Branching and tagging are cheap (constant time) operations.
- o Natively client/server.
- o Client/server protocol sends differences in both directions, so costs are proportional to change size, not data size.
- o File locking for unmergeable files ("reserved checkouts").

We will use RapidSVN as a multiplatform Subversion client tool, see Figure 1, keep in mind that this is a personal choice, more than 20 client tool and IDE plug-in are available at <http://subversion.tigris.org/links.html>

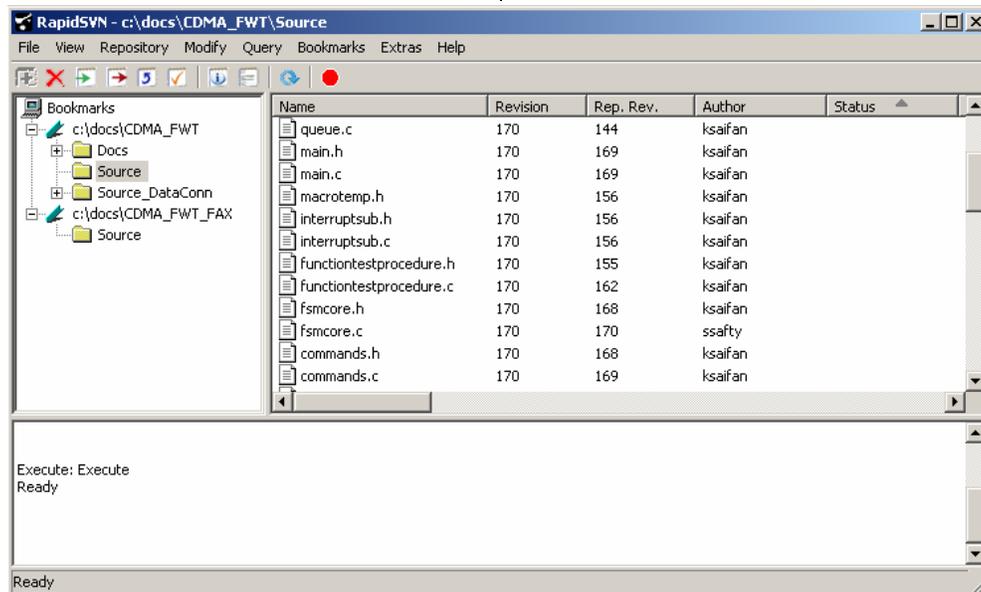


Figure 1: RapidSVN as a multiplatform subversion client tool

In order to help you introduce Subversion in your work, I will show steps of installation, configuration and basic use, I will cover only Windows-based installation.

Download and Install

1. Download subversion client/server software from

<http://subversion.tigris.org/files/documents/15/32473/svn-win32-1.3.2.zip>

2. Install the downloaded file to c:\subversion
3. Add c:\subversion\bin to the Windows PATH variable.

4. Download RapidSVN from <http://rapidsvn.tigris.org/>
5. Install RapidSVN to any place in your hard disk, and keep its icon reachable.
6. Run RapidSVN and explore it a little to be familiar with.

Configure and Use

1. We simply create a repository per project.
2. Create a root folder for all your repositories, create c:\svnrepos\
3. Create initial repository: Open command shell, and run svnadmin create c:\svnrepos\project1.
4. Open Command prompt, run the server by running the command svnserve -d -r c:\svnrepos, this means you want to run the svnserve as a daemon to serve repositories under c:\svnrepos.
5. open svnserve.conf under c:\svnrepos\project1\conf, uncomment the following lines:
[general]
auth-access = write
password-db = passwd
6. Open passwd under c:\svnrepos\project1\conf, uncomment the following lines:
[users]
ahmed=pass1
aly=pass2

add users in the format that user=password, as shown above. There exist many options in authorization and authentication, see references section for additional documents.

Check out a version from the repository

1. Run RapidSVN.
2. Press Ctrl->O write svn://192.168.0.79/project1 in URL field, (I assume the server machine IP is 192.168.0.79), write Destination Directory, I assume c:\projects\project1, then press OK.

Add Files

1. Create new file, name it file.txt, write the statement This is version 1, save the file, and copy it under c:\projects\project1. Open RapidSVN, open the bookmark added previously, you will see the file status unversioned, right click the file and select Add command. Now the file status is added, but the Rep. Rev. is -1. This means that you still have to commit the file in order to add it to the repository, right click the file and select Commit..., now the file status is empty. And Rep. Rev. is 1.
2. Open the file1.txt in any text editor, add second line as following This is text line number 2. Save the file. In RapidSVN the Status is modified. To commit the file to the repository, right click and select Commit..., you will be authenticated, write matching user name and password that match one that is created in passwd file, after OK, the Rep. Rev. is now 2.

Text Viewing, Differences and Merges

1. For text files viewing, you can use Notepad++ from <http://notepad-plus.sourceforge.net/uk/site.htm>, you can also use Programmers Notepad at <http://www.pnotepad.org/>. Both are open source and good quality.
2. For text files differences and merge tool, WinMerge is an excellent tool, download from <http://winmerge.sourceforge.net/>

In RapidSVN, select View > Preferences and select Programs tab, adjust the path of Standard Editor and Diff Tool as shown in Figure 2.

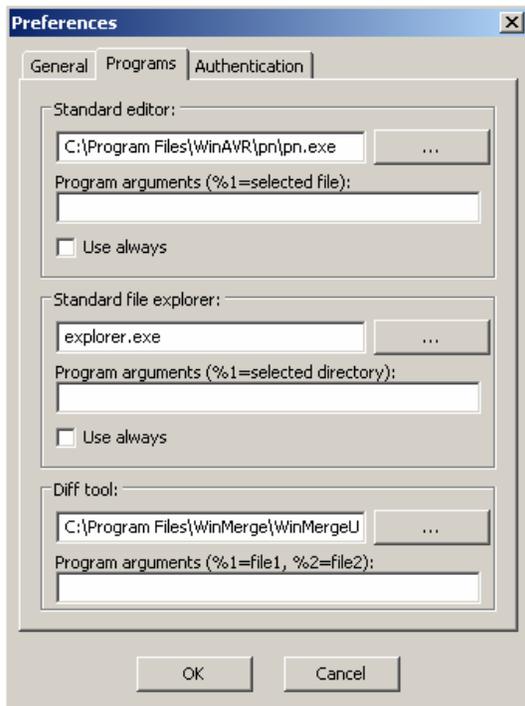


Figure 2: Setting preferences

The following guidelines are our practical experience that helped us to use subversion properly in a way that

helps us make our source code versions manageable.

- o Update frequently as much as you can, commit on average daily. In case of any conflict consult software team leader and other team members, in 95% of cases you can resolve the conflict safely without any guidance.
- o Commit each logical unit of change separately, as example if you are going to fix three bugs, commit each bug separately, this will ease changes tracking.
- o On every commit, write detailed notes.
- o Don't ever commit code that breaks the build.
- o Don't change any code that you don't own without consultation to the code owner.
- o Before committing run self-test-procedure for your changes.
- o Use WinMerge always to review changes carefully before each commit.
- o Don't put generated files into version control, put only source files whatever it is textual or binary files like images or word documents.

You can run subversion as a Windows service, you can also receive email notification of code changes automatically, for these points and others, drop an email to CMM-EGYPT@yahoogroups.com and we will support as much as we can.

Finally, we just showed the basic installation and configuration, let's share experience regarding tools and

advanced configurations through our CMM-Egypt group.

References

1. <http://www.wikipedia.org>
2. <http://subversion.tigris.org>
3. <http://rapidsvn.tigris.org>
4. <http://notepad-plus.sourceforge.net/>
5. <http://www.pnotepad.org>
6. <http://winmerge.sourceforge.net>

Biography

Ahmed M. Hammad, CDMA Software Manager in the Research & Development Dept. in the Egyptian Telephone Company "QuickTel". He has experience in software development and management for more than 13 years, in Desktop, web based and embedded development.

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