Deployment Package
Authorization in Mobiles
Basic Profile + Security

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The processes described in this Deployment Package are not intended to preclude or discourage the use of additional processes that Very Small Entities may find useful.

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Abbreviations/Acronyms

Abre./Acro.	Definitions
DP	Deployment Package - a set of artefacts developed to facilitate the implementation of a set of practices, of the selected framework, in a Very Small Entity.
VSE	Very Small Entity – an enterprise, organization, department or project having up to 25 people.
VSEs	Very Small Entities
TL	Technical Leader
AN	Analyst
DES	Designer
PR	Programmer
PM	Project Manager
SA	Security Advisor

Table of Contents

1. Technical Description

Purpose of this document

This Deployment Package (DP) supports the Basic Profile as defined in ISO/IEC TR 29110-5-1-2:2011 Management and Engineering Guide. The Basic Profile is one profile of the Generic profile group. The Generic profile group is composed of 4 profiles: Entry, Basic, Intermediate and Advanced. The Generic profile group is applicable to VSEs that do not develop critical software. The Generic profile group does not imply any specific application domain. The Basic Profile describes software development of a single application by a single project team with no special risk or situational factors.

A DP is a set of artefacts developed to facilitate the implementation of a set of practices in a Very Small Entity (VSE). A DP is not a process reference model (i.e. it is not prescriptive). The elements of a typical DP are: description of processes, activities, tasks, roles and products, template, checklist, example, reference and reference to standards and models, and tools.

The content of this document is entirely *informative*.

This document has been produced by Javier Flores (UNAM, México) and Ana Vazquez of 5th level (México) beyond her participation to ISO JTC1/SC7/WG24.

Why is Authorization in Mobiles Important?

The authorization is the part of a system that gives the user permissions to manage information that are at their hands, so the need of a well-defined authorization hierarchy, corresponding identifiers of the competences of the user and delimit the reach of a user is of a great importance because of the misuse of the information of unauthorized agents.

2. Definitions

In this section, the reader will find two sets of definitions. The first set defines the terms used in all Deployment Packages, i.e. generic terms. The second set of terms used in this Deployment package, i.e. specific terms.

Generic Terms

Process: set of interrelated or interacting activities which transform inputs into outputs [ISO/IEC 12207].

Activity: a set of cohesive tasks of a process [ISO/IEC 12207].

Task: required, recommended, or permissible action, intended to contribute to the achievement of one or more outcomes of a process [ISO/IEC 12207].

Sub-Task: When a task is complex, it is divided into sub-tasks.

Step: In a deployment package, a task is decomposed in a sequence of steps.

Role: a defined function to be performed by a project team member, such as testing, filing, inspecting, coding. [ISO/IEC 24765]

Product: piece of information or deliverable that can be produced (not mandatory) by one or several tasks. *(e. g. design document, source code)*.

Artefact: information, which is not listed in ISO/IEC 29110 Part 5, but can help a VSE during the execution of a project.

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3. Relationships with ISO/IEC 29110

This deployment package covers the activities related to Definition of Requirements of the ISO/IEC 29110 Part 5-1-2 for Very Small Entities (VSEs) – Basic Profile [ISO/IEC29110] taking in consideration security practices in Mobiles.

In this section, the reader will find a list of Software Implementation (SI) process, activities, tasks and roles from Part 5 that are directly related to this topic. This topic is described in details in the next section.

- **Process:**
    - o **Software Implementation**
- **Activities:**
    - o **SI.2 Software requirements analysis**
- **Tasks and Roles:**

Tasks	Roles
SI.2.2 Document or update the *Requirements Specification.* Identify and consult information sources (customer, users, previous systems, documents, etc.) in order to get new requirements. Analyse the identified requirements to determinate the scope and feasibility. Generate or update the *Requirements Specification.*	AN, CUS
SI.2.3 Verification and obtaining approval of the *Requirements Specification.* Verify the correctness and testability of the *Requirements Specification* and its consistency with the *Product Description*. Additionally, review that requirements are complete, unambiguous and not contradictory. The results found are documented in a *Verification Results* and corrections are made until the document is approved by AN. If significant changes were needed, initiate a *Change Request.*	AN, TL

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4. Description of Processes, Activities, Tasks, Steps, Roles and Products

- **Process:**
    - o **Software Implementation**
- **Activities:**
    - o **SI.2 Software requirements analysis**
- **Tasks and Roles:**

Tasks	Roles
SI.2.2 Document or update the *Requirements Specification.* Identify and consult information sources (customer, users, previous systems, documents, etc.) in order to get new requirements. Analyse the identified requirements to determinate the scope and feasibility. Generate or update the *Requirements Specification.*	AN, CUS
SI.2.3 Verification and obtaining approval of the *Requirements Specification.* Verify the correctness and testability of the *Requirements Specification* and its consistency with the *Product Description*. Additionally, review that requirements are complete, unambiguous and not contradictory. The results found are documented in a *Verification Results* and corrections are made until the document is approved by AN. If significant changes were needed, initiate a *Change Request.*	AN, TL

This task is related with the following sub-tasks:

- Avoid Insecure Authorization

Avoid Insecure Authorization

Objectives:	Avoid Insecure Authorization practices.
Roles:	Project Manager
	Technical Leader
	Programmer
	Security Advisor
Artefacts:	Authentication Verification
Steps:	1. Verify the roles and permissions of the authenticated user
	2. Verify any incoming identifiers associated with a request
Step	***Step 1. Verify the roles and permissions of the authenticated***

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Description:	user
	Only the information contained in the back-end is used to verify the role and permissions of the authenticated user. Do not rely on the role or credentials of the mobile device itself.
	Step 2. Verify any incoming identifiers associated with a request
	The back-end code must independently verify that the received identifier associated with the request (the operand of the requested work) is supplied with the matching identifier and belongs to the receive identifier.

Role Description

This is an alphabetical list of the roles, abbreviations and list of competencies as defined in ISO 29110 Part 5-1-2 and the security considerations.

	Role	*Abbreviation*	*Competency*
2.	Programmer	PR	Knowledge and/or experience in programming, integration and unit tests.
			Knowledge of the revision techniques.
			Knowledge of the editing techniques.
			Experience on the software development and maintenance.
3.	Security Advisor	SA	Knowledge to advise the businesses to identify potential security weaknesses, create security policies, and reduce risks to their IT systems.
4.	Technical Leader	TL	Knowledge and experience in the software process domain.
5.	Project Manager	PM	Leadership capability with experience making decisions, planning, personnel management, delegation and supervision, finances and software development.

Product Description

This is an alphabetical list of the input, output and internal process products, its descriptions, possible states and the source of the product.

	Name	Description	Source
1.	Change Request	It may has the following characteristics: Identifies purpose of change Identifies request status (new, accepted, rejected)	Software Implementation Customer Project

		Identifies requester contact information Impacted system(s) Impact to operations of existing system(s) defined Impact to associated documentation defined Criticality of the request, date needed by The applicable statuses are: initiated, evaluated and accepted.	Management

2.	Project Plan	It Includes the following elements which may have the characteristics as follows:
		
		- Product Description
		    o Purpose
		    o General Customer requirements
		- Scope description of what is included and what is not
		- Objectives of the project
		- Deliverables - list of products to be delivered to Customer
		- Tasks, including verification, validation and reviews with Customer and Work Team, to assure the quality of work products. Tasks may be represented as a Work Breakdown Structure (WBS). The task also includes the identification of security requirements, list of assets, threats, information security risk and incidents.
		- *Relationship and Dependence of the Tasks*
		- *Estimated Duration* of tasks
		- *Resources* o perform the project both in development and security (humans, materials, equipment and tools) including the required training, and the schedule when the resources are needed.
		- *Composition of Work Team*
		- *Competences pf personal Record*
		- *Role Matrix*
		- *Incidents Response of the project*
		- Schedule of the Project Tasks, the expected start and completion date, for each task.
		- Estimated Effort and Cost
		- Identification of Project Risks
		- Version Control Strategy
		  - Product repository tools or mechanism identified
		  - Location and access mechanisms for the repository specified
		  - Version identification and control defined
		  - Backup and recovery mechanisms defined
		  - Storage, handling and delivery (including archival and retrieval)
			Project Management

		mechanisms specified
		- Delivery Instructions
		  - Elements required for product release identified (i.e., hardware, software, documentation etc.)
		  - Delivery requirements
		  - Sequential ordering of tasks to be performed
		  - Applicable releases identified
		  - Identifies all delivered software components with version information
		  - Identifies any necessary backup and recovery procedures
		The applicable statuses are: verified, accepted, updated and reviewed.	

3.	Project Repository	It may have the following characteristics: - Stores project work products - Stores released deliverables products - Storage and retrieval capabilities - Ability to browse content - Listing of contents with description of attributes - Sharing and transfer of work products between affected groups - Effective controls over access - Maintain work products descriptions - Recovery of archive versions of work products - Ability to report work products status - Changes to work products are tracked to Change Requests The applicable statuses are: recovered and updated.	Project Management

4.	Requirements Specification	It may have the following characteristics:
		- Introduction –general description of software and its use within the scope of the customer business;
		
		- Requirements description:
		  - Functionality – established needs to be satisfied by the software when it is used in specific conditions. Functionality must be adequate, accurate and safe.
		
		  - User interface – definition of those user interface characteristics that allow to understand and learn the software easily so the user be able to perform his/her tasks efficiently including the
			Software Implementation

		interface exemplar description;	
		- External interfaces – definition of interfaces with other software or hardware;	
		- <mark>Security – specification of the software execution level concerning the level of security implemented</mark>	
		- Reliability – specification of the software execution level concerning the maturity, fault tolerance and recovery;	
		- Efficiency – specification of the software execution level concerning the time and use of the resources;	
		- Maintenance – description of the elements facilitating the understanding and execution of the future software modifications;	
		- Portability – description of the software characteristics that allow its transfer from one place to other;	
		- Design and construction limitations/constraints – needs imposed by the customer;	
		- Interoperability – capability for two or more systems or software components be able to change information each other and use it.	
		- Reusability – feature of any product/sub-product, or a part of it, so that it can be used by several users as an end product, in the own software development, or in the execution of other software products.	
		- Legal and regulative – needs imposed by laws, regulations, etc.	
		Each requirement is identified, unique and it is verifiable or can be assessed.	
		The applicable statuses are: verified, validated and baselined.	
5.	Software User Documentation	It may have the following characteristics: - User procedures for performing specified tasks using the Software	Software Implementation

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		- Installation and de-installation procedures - Brief description of the intended use of the Software (the concept of operations) - The supplied and required resources - Needed operational environment - Availability of problem reporting and assistance - Procedures to access and exit the Software - Lists and explains software commands and system-provided messages to the user - As appropriate for the identified risk, it includes warnings, cautions, and notes, with corrections - It includes troubleshooting and error correction procedures. It is written in terms understandable by users. The applicable statuses are: preliminary, verified and baselined.	
6.	Verification Results	It may include the record of: - Participants - Date - Place - Duration - Verification check-list - Passed items of verification - Failed items of verification - Pending items of verification - Defects identified during verification	Project Management Software Implementation
7.	Validation Results	Documents the validation execution, It may include the record of: - Participants - Date - Place - Duration - Validation check-list - Passed items of validation - Failed items of validation - Pending items of validation - Defects identified during validation	Software Implementation

Artefact Description

This is an alphabetical list of the artefacts that could be produced to facilitate the documentation of a project. The artefacts are not required by Part 5, they are optional.

	Name	Description
1.	Authorization Verification	Includes the verification of the authorization considerations that must be used in the development of a Mobile application

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5. References

Key	Reference
[Code Complete]	Steve McConnell, Code Complete, Second Edition, Redmond, Washington, Microsoft Press, 2004**.**
[Art of Software testing]	Glenford J. Myers, The Art of Software Testing, Second Edition, 2004.
[Practitioner's Guide]	Lee Copeland, A Practitioner's Guide to Software Test Design, 2004
[Defect Prevention]	Marc McDonald, The Practical Guide To Defect Prevention, 2008
[Introduction to Software Testing]	Paul Ammann & Jeff Offutt, Introduction to Software testing, 2008
[Testing Computer Software]	Cem Kaner, Testing Computer Software
[Pratical Software Testing]	Ilene Burnstein, Practical Software Testing, 2002
[SE Support Activities for VSE]	Vincent Ribaud, Software Engineering Support Activities for Very Small Entities, 2010
[Application of ISES in VSE]	Claude Y. Laporte, The application of International Software Engineering Standards in Very Small Enterprises, 2008
[A SE Lifecycle Standard for VSEs]	Claude Y. Laporte, A Software Engineering Lifecycle Standard for Very Small Enterprises, 2008
[Misuse Code Coverage]	Brian Marick, How to Misuse Code Coverage, 1999
[IEEE 1012-2004]	IEEE 1012-2004 IEEE Standard for Software Verification and Validation, IEEE Computer Society
[ISO/IEC 12207]	ISO/IEC 12207:2008 Systems and software engineering – Software life cycle processes.
[ISO/IEC TR 29110-5-1-2]	ISO/IEC TR 29110-5-1-2:2011, Software Engineering—Lifecycle Profiles for Very Small Entities (VSEs) – Part 5-1-2: Management and Engineering Guide – Generic Profile Group - Basic Profile