

# AltusR&D Maturity Model

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Based on a work at  
[http://promise.sel.inf.uc3m.es/home/thesis/Altus\\_RD\\_Maturity\\_Level.pdf](http://promise.sel.inf.uc3m.es/home/thesis/Altus_RD_Maturity_Level.pdf).



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## Description of architectural elements

<b>Architectural Element</b>	<b>Description</b>
<b>Configuration</b>	Defines a set of capabilities that must develop the SME to establish the minimum requirements to enable it to implement the model of maturity level of R&D, to manage your knowledge.
<b>Formative</b>	It defines a set of capabilities that specify the mechanisms to be implemented in SMEs so that knowledge of R & D tacit about services, products, processes and people is accessible to all members of the SME; on the other hand it defines the capabilities that must develop an SME for the formation of its members be enriched with knowledge itself generated within the SME.
<b>Operative</b>	It aims to provide SMEs with the necessary capabilities to enable its members to access the knowledge of R & D explicit to reuse in their daily activities and to enrich it with new experiences, additional resources or examples of use
<b>Proactive</b>	It defines a set of capabilities that allow members of the SME make use of knowledge proactively, allowing them to know at all times the use and the opinion of those knowledge assets of R & D that have contributed to that based on this information, a person is able to decide how to manage their stored contributions, enriching what are most useful, delete, or completely remake themselves are not providing value to SMEs.
<b>Assessment SP3</b>	It helps satisfy the need for SMEs to know the benefits and advantages that entails making the effort to represent their knowledge of R & D explicitly; to achieve this, this architectural element proposes a set of capabilities that allow monitoring of the use of knowledge assets R&D.
<b>Social</b>	It helps provide SMEs with the necessary skills to manage the way in which its members interact to create knowledge assets R & D, and reuse knowledge explicitly represented in the execution of their daily tasks, not only at staff, but

	also at the level of working groups or functional areas of an SME.
<b>Transactional memory</b>	It defines a set of capabilities that enable an SME to define a repository of knowledge of R & D organization that allows storing the knowledge about the know-how that members of the organization have on services, processes and products; for the development of the daily activities of its members; there also stored knowledge, evolve while used and reused.

AltusR&D Maturity level 1					Coupling module with International standards connection	Assessment Questions
R&D Architectural Element	R&D Capabilities	R&D Indicators	R&D Activities	R&D Instruments	UNE166000 Standard Elements	Questions
<b>R&amp;D Configuration</b>	<b>CONF-R&amp;D -1:</b> Identify needs that lead to generate the goals of the organization.	Evaluation Indicator	*Clearly define the mission, vision and values of the organization.*Define the strategic objectives of the organization.	Instrument of strategic improvement plan R&D (PEM).	Memory Project Objectives	Does the organization a clear goal or set of goals?
	<b>CONF-R&amp;D -2:</b> Identify future perceptions.	Evaluation indicator	Describe future perception area, project, service, and task. Conduct market research service products. Conduct studies of knowledge assets R&D within the organization (knowledge / staff).	Instrument of strategic improvement plan R&D (PEM).	Memory Project Objectives	How you consider that the resources that have or plan the organization are relevant to meet the desired objectives?
	<b>CONF-R&amp;D -4:</b> Identify specific needs in the market that do not meet total satisfaction for customers and focus a strategy on it.	Efficacy Indicator	Conduct studies of demographic demand. Customer satisfaction analyzes / service / product / project	Instrument of strategic improvement plan R&D (PEM). Monitoring and control instrument R&D	Memory Project Objectives	Does the organization have knowledge of the specific requirements applying in the market?
	<b>CONF-R&amp;D -5:</b> Identifying geographical segments.	Evaluation indicator Management Indicator	Define the market segment to be Planning a marketing strategy R & D Develop marketing strategies for R & D	Monitoring and control instrument R&D	Memory Project Objectives	How do you consider your knowledge as to know the degree of market demand and consumers regarding products / services / projects in the environment in which it competes?
	<b>CONF-R&amp;D -6:</b> Identify and Manage media dissemination of results.	Efficacy Indicator	Identify means of dissemination for the organization Evaluate the different contexts in which the results are disseminated.	Monitoring and control instrument R&D	Memory Project Objectives	How do you think is the communication of results information or development of services / processes within the organization?
	<b>CONF-R&amp;D -7:</b> Identify earnings or benefits in the organization.	Management Indicator	Identify beneficial interest for the organization Analyze these interests.	Initial assessment Instrument	Memory Project Objectives	How do you consider your knowledge in managing their economic benefits

						(services / processes / projects / areas)?
	<b>CONF-R&amp;D -8:</b> Check and Identify the economic situation that has the organization.	Management Indicator	Identify the property and assets of the organization. Verifying that such property and assets are in order.	Initial assessment Instrument	Memory Project Objectives	How do you think the administration is of the economic resources of the organization under expenses to be awarded to each service / process / project / area?
	<b>CONF-R&amp;D -9:</b> Identify strategies for investments.	Management Indicator	Identify resources of the organization that are possible perceptions beneficial to the organization. Identify strategic procedures to invest in the resources identified.	Initial assessment Instrument	Memory Project Objectives	How do you think are your strategies regarding investments each service / process / project / area?
	<b>CONF-R&amp;D -10:</b> TMS design.	Efficacy Indicator	Define the requirements of TMS. TMS architecture design. Develop a plan for the implementation of TMS.	Instrument of strategic improvement plan R&D (PEM)	Planning- documentation Structure	When we talk about your repository of knowledge that must be organized, accessible and visible to members of the organization, as considered?
	<b>CONF-R&amp;D -11:</b> Design of organizational social network	Management Indicator	Define the initial structure of the organizational social network. Define a plan for the implementation of the organizational social network.	Instrument of strategic improvement plan R&D (PEM)	Planning- documentation Structure	How do you rate the IDE of the organization in terms of communication, sharing and display of information?
<b>R&amp;D Formative</b>	<b>FORM-R&amp;D-1:</b> Identify the pros and cons of human and economic resources.	Management Indicator	*Identify the advantages and disadvantages of human resources. *Identify advantages and disadvantages of economic resources	Initial assessment Instrument	Planning- documentation Structure	Do you have any document that record information from the pros and cons of the resources of your organization? (The advantages and disadvantages of organizational resources)
	<b>FORM-R&amp;D-2:</b> Define alternative strategies to restrictions.	Management Indicator	Define detailed with alternate options to restrictions that generate actions. Documenting these actions in the appropriate instrument	Initial assessment Instrument	Planning- documentation Structure	Does the documentation of the alternatives or restrictions of each service / process / project / area are documented so?
<b>R&amp;D Operative</b>	<b>OPER-R&amp;D-1:</b> Define a strategy overview to internal and external environment of the organization.	Evaluation Indicator compliance Indicator	*Define the goals to be achieved to a future internally and externally to the organization	Instrument of strategic improvement plan R&D (PEM)	Plan of industrial and economic benefits of the project	Does the organization know how to define their strategies (actions or plans) global inside and outside?
	<b>OPER-R&amp;D-2:</b> Managing visual statistics cost estimation.	Management Indicator	Identify the costs of each service / product / project etc. Review estimates for past and current comparisons.	Initial assessment Instrument	Plan of industrial and economic benefits of the project	Is the development of statistics or financial status of the organization to be reported for each service / process / project / area are documented so?
	<b>OPER-R&amp;D-3:</b> Manage human	Management Indicator	Identification and selection of staff by area,	Instrument of strategic	Plan of industrial and	How accessible and understandable

	and financial resources.	compliance Indicator	service, project, etc. Identification of skills and knowledge assets of selected personal.	improvement plan R&D (PEM)	economic benefits of the project	documentation provided is based on the general information of every human and economic resource of the organization?
<b>R&amp;D Assessment SP3</b>	<b>VAL-R&amp;D-1:</b> Rating SP3 on a personal level.	Management Indicator	*Define the mechanisms and parameters under which the individual assessment SP3 members of the organization will. *Run the SP3 valuation individually. *Make a report on the SP3 assessment of each member of the organization	Monitoring and control instrument R&D	Planning- tasks and their interactions. Organizational Structure and Planning- Personal (roles)	Receive any report from the company in which you communicate what have been your contribution level services, processes or products which have participated annually?
	<b>VAL-R&amp;D-2:</b> Assessment of the importance of managing R&D	compliance Indicator	Define the mechanisms and parameters under which the assessment of the importance of knowledge of R & D and management for the organization will be. Diagnose the value that the organization knowledge management R & D.	Initial assessment Instrument	Planning- Control Project	How do you think the level of importance of R & D for your organization?
	<b>VAL-R&amp;D-3:</b> Assessment of knowledge assets.	compliance Indicator	Analyze each instrument developed in the R & D model Monitoring instruments	Instrument of strategic improvement plan R&D (PEM)	Planning- Control Project	How do you think is the reuse and reuse of knowledge assets within the organization?
<b>R&amp;D Social</b>	<b>SOCI-R&amp;D-1:</b> Communicate and share strategies to the organization.	compliance Indicator	*Plan how to communicate and share strategies of the organization.	Initial assessment Instrument	Quality plan Planning- management changes and unforeseen risks	Does the organization know how to communicate their strategies to members of her?
<b>R&amp;D Transactional memory</b>	<b>MEMO-R&amp;D-1:</b> Management of individual contributions of knowledge.	Management Indicator	*Define the indicators that are used to manage knowledge assets R&D organization. *Incorporate the module configuration management knowledge of R&D to TMS	Monitoring and control instrument R&D	Planning- Control Project	Is there in this organization some mechanism to create and store knowledge that has been generated individually?

AltusR&D Maturity level 2					Coupling module with International standards connection	Assessment Questions
R&D Architectural Element	R&D Capabilities	R&D Indicators	R&D Activities	R&D Instruments	UNE166000 Standard Elements	Questions
<b>R&amp;D Configuration</b>	<b>CONF-R&amp;D -3:</b> Reinventing proposed ideas and ideas development.	Evaluation Indicator	Locate a new service, product, project etc. Or develop a new idea. Improve the proposals and service development ideas, products, projects etc. based on new uses or new materials.	Instrument of strategic improvement plan R&D (PEM).	Memory Project Objectives	How do you think is the ability to invent ideas before and during the development of their projects?
	<b>CONF-R&amp;D -12:</b> collective creation of knowledge assets.	Management Indicator	Knowledge representation identify mechanisms that facilitate the creation of knowledge assets R & D collaboratively.	Instrument of strategic improvement plan R&D (PEM).	Planning- documentation Structure	How do you think is the information matrix of knowledge assets / staff / area?
<b>R&amp;D Operative</b>	<b>OPER-R&amp;D-4:</b> conceptualizing and visualize personnel within the organization.	Management Indicator	Design of an organization chart Dissemination of the organization.	Instrument of strategic improvement plan R&D (PEM).	Planning- documentation Structure	Do you consider the information of a general organization chart is?
	<b>OPER-R&amp;D-5:</b> Manage the project portfolio structure Area / Project / Personal / Aptitude / Activity)	Evaluation Indicator compliance Indicator	Align these projects with architectures, strategies, methods and policies of the organization. Structuring such projects with the areas, projects, personnel, skills and relevant activities of the organization.	Instrument of strategic improvement plan R&D (PEM)	Planning- documentation Structure	Is the information on the structure of portfolio of projects within the organization?
	<b>OPER-R&amp;D-6:</b> Manage planning project portfolio management level.	Management Indicator	Planning portfolios of the organization to ensure timely all kinds of risks, as well as changes that may exist to perform the analysis from the top management of the organization.	Instrument of strategic improvement plan R&D (PEM)	Planning- documentation Structure	How do you think is the accessibility and visibility of information on the structure of project portfolios for members of the organization?
<b>R&amp;D Proactive</b>	<b>PRO-R&amp;D-1:</b> Display Plan (Phase / Iteration / Personal).	Management Indicator	Define a plan and display mechanism phases / iterations and staff. Disseminate the plan in the organization.	Monitoring and control instrument R&D	Planning- tasks and their interactions. Organizational Structure and Planning- Personal (roles)	How do you think is the display of information of the participating members of each service / process / project / area is?

<b>R&amp;D Assessment SP3</b>	<b>VAL-R&amp;D-2:</b> Visualize, Analyze and monitoring instruments of the organization.	compliance Indicator	Analyze each instrument model developed in R&D Monitoring instruments and Analyze the instruments	Monitoring and control instrument R&D	Planning-Control Project	How do you think is the display of detailed information on the development of services / processes / projects / areas?
<b>R&amp;D Social</b>	<b>SOCI-R&amp;D-2:</b> Creating social relations group	Management Indicator	Identify group social relationships that exist in the organization. Create a graph representing the identified relationships	Instrument of strategic improvement plan R&D (PEM)	Planning- tasks and their interactions. Organizational Structure and Planning- Personal (roles)	

AltusR&D Maturity level 3					Coupling module with International standards connection	Assessment Questions
R&D Architectural Element	R&D Capabilities	R&D Indicators	R&D Activities	R&D Instruments	UNE166000 Standard Elements	Questions
<b>R&amp;D Configuration</b>	<b>CONF-R&amp;D -13:</b> Defining quality indicators.	Efficacy Indicator	Defining Control Indicators Relate these indicators with the capabilities of the architectural element	Monitoring and control instrument R&D	Memory Project Objectives	Is the collection of the results of its quality indicators considered?
<b>R&amp;D Formative</b>	<b>FORM-R&amp;D-3:</b> Identification of Coaches and evangelizers.	Management Indicator	To elaborate a list of the areas of knowledge of R & D that exist in the organization.	Instrument of strategic improvement plan R&D (PEM)	Planning- tasks and their interactions. Organizational Structure and Planning- Personal (roles)	How do you think is the existence of persons responsible, directly dependent and supported by senior management of the company, responsible for ensuring and transmit the importance of governance of organizational knowledge as well as the objectives are achieved?
	<b>FORM-R&amp;D-4:</b> Identification of case studies to enrich training.	Management Indicator	Identify projects completed within the organization, which can provide positive to the training of its member's experiences.	Initial assessment Instrument	Plan of industrial and economic benefits of the project	How do you think is the identification of cases of projects developed within this organization, which by their nature are worthy of being incorporated as case studies in the training courses?
<b>R&amp;D Operative</b>	<b>OPER-R&amp;D-7:</b> Manage real time monitoring and assumptions.	Efficiency Indicator	Apply the process of monitoring and control of the project in all R & D activities throughout the project. Documenting such monitoring in the corresponding instrument.	Monitoring and control instrument R&D	Plan of industrial and economic benefits of the project	How do you think is the mechanism that allows you to manage and keep track of the times of the portfolio of projects by area, personal, activity etc.?

	<b>OPER-R&amp;D-8:</b> Implement a control strategy of the project (PEM R&D)	Efficacy Indicator	Implementing the Strategic Plan instrument R&D (PEM)	Instrument of strategic improvement plan R&D (PEM)	Planning-Control Project	Do you consider the use of a strategic plan for improving R & D is?
<b>R&amp;D Proactive</b>	<b>PRO-R&amp;D-2:</b> Report on the use of the variables that were established in the beginning (time, resources, experiences, etc.)	compliance Indicator	Establish a mechanism for reporting the results of the organization and motivate members of the organization.	Initial assessment Instrument	Planning-Control Project	How do you consider your statistical mechanism that provides regular information from past and comparative percentages of its portfolio of projects?
<b>R&amp;D Social</b>	<b>SOCI-R&amp;D-3:</b> Communicating statistics to encourage positive users of the variables that were established in the beginning (time, resources, experiences, etc.) increase.	compliance Indicator	Communicating the statistical report of the organization to the appropriate members of the organization	Monitoring and control instrument R&D	Planning-Control Project	How do you think is the recognition that is given to staff regarding their work developed, it is encouraging and motivating?
	<b>SOCI-R&amp;D-4:</b> Recognition of the contributions made by the members of the organization.	Management Indicator	Prepare a report on knowledge assets R & D more relevant to make it known to all members of the organization, and thus, give public recognition to those members who have collaborated with the most relevant knowledge assets.	Monitoring and control instrument R&D	Planning-Control Project	How is the level of remuneration in the good performance of the company to employees?
	<b>SOCI-R&amp;D-5:</b> Creating Vertical social networks.	Efficacy Indicator	Identify vertical social relationships that exist in the organization. Create a graph representing the vertical relationships identified	Monitoring and control instrument R&D	Planning-Control Project	How do you think your vertical network of the organization?

AltusR&D Maturity level 4					Coupling module with International standards connection	Assessment Questions
R&D Architectural Element	R&D Capabilities	R&D Indicators	R&D Activities	R&D Instruments	UNE166000 Standard Elements	Questions
<b>R&amp;D Formative</b>	<b>FORM-R&amp;D-5:</b> Developing a strategy intelligent training.	compliance Indicator	Profesiográficos define profiles of all existing roles in the organization. Identify the individual capabilities of each of the members of the organization.	Instrument of strategic improvement plan R&D (PEM)	Planning-documentation Structure	Do you think the percentage of its strategy (PEM) is greater than 70%?
<b>R&amp;D Operative</b>	<b>OPER-R&amp;D-9:</b> Define a strategy for the projects feedback.	compliance Indicator	Prepare in advance a feedback mechanism that facilitates the collection of project documentation.	Instrument of strategic improvement plan R&D (PEM)	Planning-documentation Structure	How do you think is the feedback from existing projects and future development projects that can be created?
<b>R&amp;D Proactive</b>	<b>PRO-R&amp;D-3:</b> Define quality strategies to enforce the information generated in projects.	compliance Indicator Management Indicator	Define quality strategies covering the customers' requirement Satisfy all the needs of these customers.	Instrument of strategic improvement plan R&D (PEM)	Quality plan Planning-management changes and unforeseen risks	How do you consider the quality strategies and actions to make the information is relevant and can be useful for future projects?
	<b>PRO-R&amp;D-4:</b> Define strategies to help exploit the results generated in each project of the organization.	compliance Indicator Evaluation Indicator	Define actions or procedures that help get, disseminate and make the most of all relevant information of each service, project, product, etc. The organization	Instrument of strategic improvement plan R&D (PEM) Monitoring and control instrument R&D	Quality plan Planning-management changes and unforeseen risks	Does the exploitation of the results obtained from the projects, and the percent of growth of the goals presented at the beginning of each project is?
	<b>PRO-R&amp;D-5:</b> Manage the monitoring of current and future risks.	Evaluation Indicator	Identify and manage project risks that may decrease the ability to achieve results for the organization to reap the benefits of the project.	Monitoring and control instrument R&D Initial assessment Instrument	Planning-Control Project	How does the way to monitor current and future risks?
<b>R&amp;D Assessment SP3</b>	<b>VAL-R&amp;D-5:</b> Get results VAL-R&D-1 capacity	compliance Indicator	Get Complete results of the tools developed.	Monitoring and control instrument R&D Initial assessment Instrument Instrument of strategic improvement plan R&D (PEM)	Planning- tasks and their interactions. Organizational Structure and Planning-Personal (roles)	How do you think is the use of the instruments (documents) generated the development of projects, as well as the information in it is?
<b>R&amp;D Social</b>	<b>SOCI-R&amp;D-5:</b> Creating Vertical social networks.	Efficacy Indicator	Identify vertical social relationships that exist in the organization. Create a graph representing the vertical relationships identified	Monitoring and control instrument R&D	Planning-Control Project	How do you think your vertical network of the organization?
<b>R&amp;D Transactional memory</b>	<b>MEMO-R&amp;D-2:</b> Review Instruments R&D	Efficacy Indicator	Comprehensive analysis of R & D instruments	Monitoring and control instrument R&D	Planning-Control Project	How do you rate your display mechanism (IDE) general information on results, customer satisfaction, product impact, etc.?