Cradle-7

From concept to creation...

3SL

Cradle-REQ

The **Cradle-REQ** module provides a complete requirements capture and engineering solution with built-in CM. It can manage needs, risks, products, features, tests, validations and any other data. It is easily applied to both agile and phase-based processes.

Requirements management is part of every agile and phase process. Stakeholder needs are captured, analysed and engineered. Changes are tracked in a CM system. All needs will be linked to design, build, test and acceptance information. In agile, this is in every sprint. In phase-based processes, it is less frequent. But the techniques are the same, and the same tool needs apply that only Cradle provides:

- User-defined information, attributes and links
- Data query, view and manipulation features
- Built-in quality checks on items' contents
- Integrated modelling
- Built-in collaboration, discussions and alerts
- Built-in configuration management (CM) with baselines and formal change (CC)

You can define requirement types (user, business, system, product, functional or non-functional), user stories and use cases. You link to codes, standards, regulations, knowledge or assumptions. You define other item types to be managed, such as functions, issues, tests, risks, SBS, PBS, WBS or defects. You control the attributes in these items, how they will be linked to each other, and their workflows.

Items have user-definable attributes, each storing or linking to up to 1 TByte of data. Attribute types are user-defined, including dates, numbers, plain and rich text, single or multi-value lists, Office$^{®}$ and other documents, and calculations.

The text in requirements, tests, verifications and other items can be quality checked against project-specific rules.

Items can be in hierarchies, groups and many:many relationships. You can create projects using a common library. Product ranges, models, variants and builds are supported. Items can be shared and reused in any of these structures.
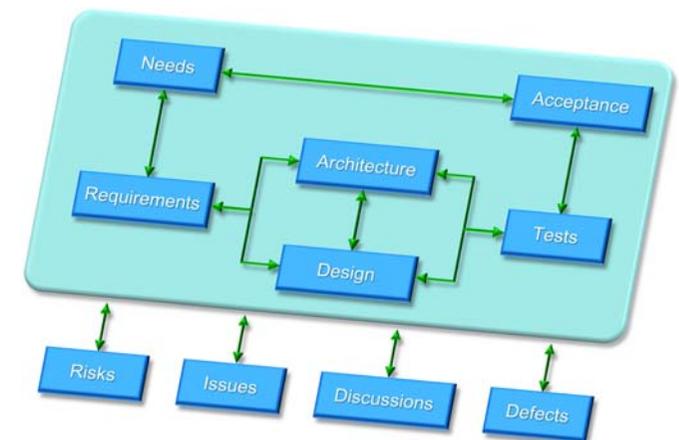
Items can be captured from external documents by Document Loader. It reproduces the document structure in a hierarchy of items. Each item is linked to its origin in the document. Figures are loaded automatically. Tables can be captured into items, images, Word objects or rich text.

Document Loader finds differences in new versions of documents. Loading the new version will update items and their links. Coverage analyses between documents and database items are provided.

Full version management of source documents is provided. Regression to previous versions is supported, with reversal of all changes.

Requirements and other items can be loaded from Word$^{®}$, Excel$^{®}$ or other tools using plug-ins, data exchange or direct interfaces.

Coverage, traceability and impact analyses are easily run, then viewed as trees, lists, tables, matrices or in dynamic Hierarchy Diagrams with user-defined attributes. Items can be filtered, sorted, split and merged. All changes to items can be logged. Users can be alerted to changes by Cradle, e-mail or both.

Users collaborate by adding discussions to items and adding threads of comments to these discussions.

REQ
Requirements
Management

Once stable, items can be progressed through a series of formal reviews that log comments from all reviewers. You define the workflows. Once in a baseline, items can be subject to formal change control using change requests (proposals) and change tasks (actions). You can view the database as it was in any previous baseline.

Multiple generations of requirements can be maintained and compared. Multiple sets of variants can be managed to reflect different products in a common family.

Items can be progressed within their lifecycles. The lifecycle of an item represents the series of stages that it can pass through between being created and reaching a final, rest, condition.

User-defined tree, table and matrix views can be defined from a point-and-click UI to show traceability, coverage and compliance. This includes RTMs, VCRMs and PVMs.
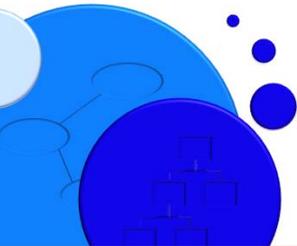
Cradle provides transitive cross referencing, in which it follows chains of multiple links between indirectly linked items, so you can see cross-lifecycle traceability in one step. For example, you can view user requirements to tests, where Cradle transparently follows intermediate links via system requirements, functions, architecture components and so on.

Requirements can be linked to test data, safety and other critical issues, risks or any project data. When used with the **Cradle-SYS** module, user stories and requirements can be linked to functional, behavioural, UML, analysis, architecture and design models organised into any number of model hierarchies in both analysis and design domains.

All information can be published in user-defined reports and formal documents.

Feature Summary

Feature	Benefits
Automated requirements capture from source documents	Load customer documents directly into Cradle, preserving hierarchical structure, figures and tables, with direct links from each captured requirement back to its source statement in the original document
Excel capture	Capture requirements and other items directly from spreadsheets, with data validation
Capture from Word documents	Capture requirements and other items directly from Word documents using the Document Loader tool
Data exchange with other tools	Exchange data efficiently with customers, partners and suppliers
Automated comparison of source document versions	Automatically find changes in new versions of source documents, with immediate impact analyses of the effect of each change and automatic update to the edit histories of items affected by each change
User-defined attributes	Customise the requirement types to the project needs
Manage rich data	Attributes can store or reference any type of data, held in Cradle or linked to external files, URLs or to data held in other tools, such as document management systems
Requirements groups, categories	Tag, group, sub-group and organise requirements to meet any need
Support multiple variants	Support typing and sub-typing, such as products in a product family, variations on a single product
Requirements engineering	Comprehensive engineering facilities (including search, group, split and merge) to find and correct deficiencies in requirements sets, including ambiguity, contradiction, duplication, and omission
Automated quality checks	Check the quality of requirement statements using user-defined rules and lists of good and bad phrases
Graphical hierarchies	View and manipulate cross references in dynamic Hierarchy Diagrams, with full control over which information and relationships are shown, and which attributes of requirements and other items are displayed
Table and matrix display styles	Easy manipulation of requirements and other items
Compliance tables	Nested tables using direct or transitive cross references to show coverage and traceability analyses
User-defined views and forms	Customise display of requirements through point-and-click UI, provide custom views and forms for specific users and user groups
Direct editing	Individual locking of each requirement allows direct editing through forms and allows multiple users to concurrently edit through table views
Find and replace	Find and replace text in selected items, or all items matching a query
Immediate commit	Changes are immediately committed to the database, no separate commit step, so all users automatically see the latest information in the database
Full evolution history	Maintain complete records of how the requirements evolved, by whom, when and why, supplemented by formal configuration management with versions, baselines and change control
Full lifecycle traceability	Allocate requirements to system architectures, functions and design items in analysis and design models, create mappings to test and acceptance data, project risks, safety, verifications and any other item types
Completeness and impact analyses	Find the impact of any change in external documentation or requirements, or find the impact on requirements or external documentation of any change elsewhere in the database
Robust, multi-user environment	Accommodate systems with millions of items (including requirements) and up to 8,192 concurrent users