Cradle-7
From concept to creation...

3SL

Cradle-MET

The **Cradle-MET** module provides the means to define metrics on the needs, requirements, user stories, features, models, tests, and all other systems engineering data in your project, and to run these metrics to monitor your progress.

Every project uses a process to create, review and publish its objectives, operational concept, sets of requirements, architecture and design models, and other systems engineering data. These processes will include management reporting, quality checks and routine audits of the volume of work that has been completed, and the completeness and quality of this work.

Metrics are a means to measure characteristics of your project data by collecting information about the materials created at each stage in the process. For agile projects, these characteristics will be analyzed at the start and end of each iteration or sprint, and in phase based processes, the analyses are likely to be weekly or monthly as part of normal project management activities.

Metrics are user-defined sets of calculations that can be run from the user-defined phase hierarchy and start pages, from the metrics tool's own UI, as a report, or from a command-line utility.

You can collect metrics on any of your project data. This includes requirements, use cases, functions, architecture components, models, interfaces, issues, risks, features, test specifications, test results, verifications and any other information generated by the systems engineering process.

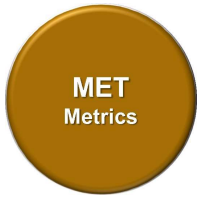
Each metric contains any number of elements, each of which is the combination of a query that finds the information in the database to be analyzed, and an analysis to be performed on this set of items found by the query.

Each metric element can use a simple query, or a complex query that nests one query inside another. The items found by the query can be counted, or the metric can perform a coverage analysis of the values of all of their category codes, or it can perform a calculation on the values of one or more attributes, including those attributes that are the results of other user-defined calculations. The results of these operations can be grouped in up to two levels based on the values of other attributes. You can also calculate weighted totals and means of a set of values. This can be used to calculate compliance of responses to a RFP or ITT. Basic calculations can be performed which are based on the results of other metric elements.

Metrics can also include pivot tables, which are a special tabular display using two of the items' attributes' values as rows and columns where the cells show the number of items from those found by the query that have each pair of values for these attributes.

If a pivot table is shown in the UI, the cells in the pivot table become links. Selecting a link displays the items that have that pair of attribute values. Thus, users can decompose the totals shown in the pivot table's cells into lists of items with the corresponding attribute values.

The results of running a



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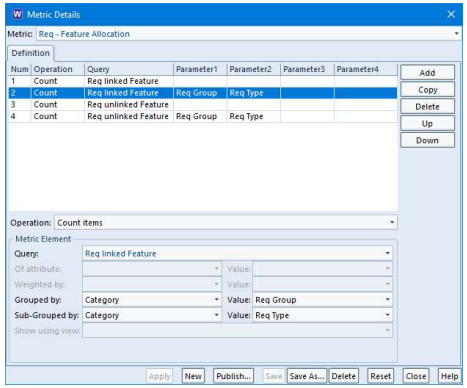


metric can be shown in Cradle web UIs and in the WorkBench UI. They can also be generated to RTF, HTML and CSV files and loaded into a variety of tools including web browsers, Word® and Excel®.

Access to the metrics tool can be controlled, to ensure reliable metrics are produced only in project-approved contexts.

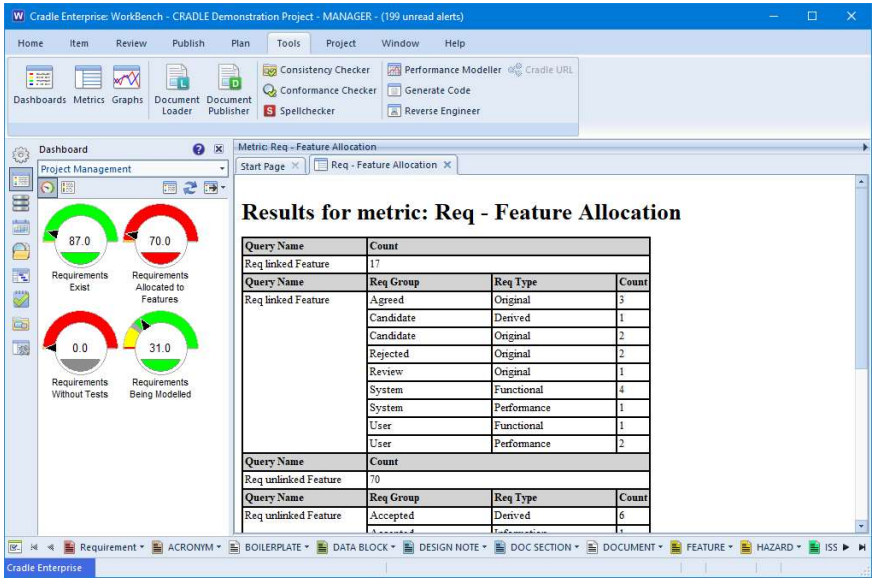
This mechanism allows projects, for example, to monitor the completeness of sets of needs or requirements, the completeness of their cross reference linkage, or the volume of data generated by specific project groups.

Metrics can be generated from any project baseline(s), allowing cumulative statistics to be created as the project develops. You can view the database as it was at the time of any historic baseline, and generate metrics from that baseline.

Metrics can be referenced from within KPIs in dashboards using the **Cradle-DASH** module.

Feature Summary

Feature	Benefits
User-defined metrics	Monitor any aspect of the project and the project's process
Run from user-defined UIs	Access from phase hierarchy in custom web UIs and WorkBench ensures metrics are easily run by all users
Run from command line	Automate production and distribution of project metrics
Coverage analyses	Full analysis of the numbers of items with each of the values of each user-defined list attributes, including unset values and values not found in the lists
Basic calculations	Perform basic calculations on the results of other metric elements
Flexible calculations	Compute results using the count of items, or values of items' attributes and items' embedded calculations
Calculations of calculations	Can create complex calculations by using calculation attribute and metric results in other calculations
Weighted calculations	Calculate weighted totals and means using a set of data values from one attribute of the items, and a set of weighting factors held in another attribute of these items
Pivot tables	Easily understand the distribution of items across the values of any two attributes, and the values' coverage
Pivot table drill-down	Easily explore the sets of items with particular combinations of attribute values
Customizable output	Easily generate reports with project-standard formats and layouts
Output to HTML, RTF and CSV	Easily generate output in common formats for common tools
Batch mode	Once defined, metrics can be published as reports from the command line, optionally in batch jobs



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