

Use Case project estimation report

The use case project estimation or 'Use Case Points' is a method for sizing and estimating projects developed with the object-oriented method, developed by Gustav Karner of Objectory (now Rational Software). The method is an extension of Function Point Analysis and Mk II Function Point Analysis (an adaption of FPA mainly used in the UK).

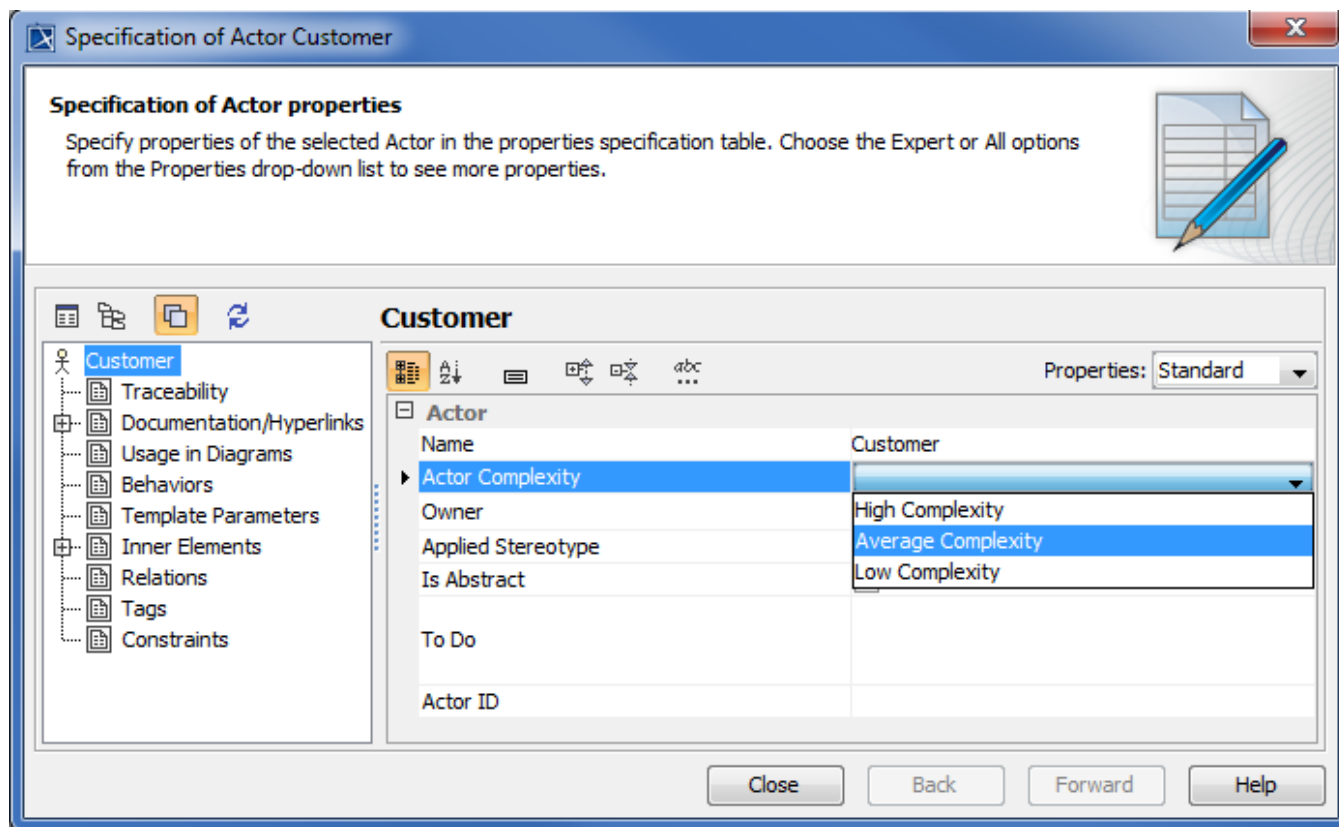
The Use Case Project Estimation report is intended to estimate the project size and duration of hourly manpower required based on the use case model. The report supports use case and SysML use case diagrams.

The use case point technique is applied to reestimate the project size. All the use cases used in the example below are based on the use case diagram. The following weight criteria are used:

Classifying Actors

The table below lists Actors Classifications

Actor Complexity	Litmus Test to recognize classifications	Weight
Low Complexity	An external system with a well-defined API.	1
Average complexity	Either a human with a command line interface or an external system via some protocols or a database.	2
High complexity	A human with a GUI or a web page.	3



Specification of Actor.

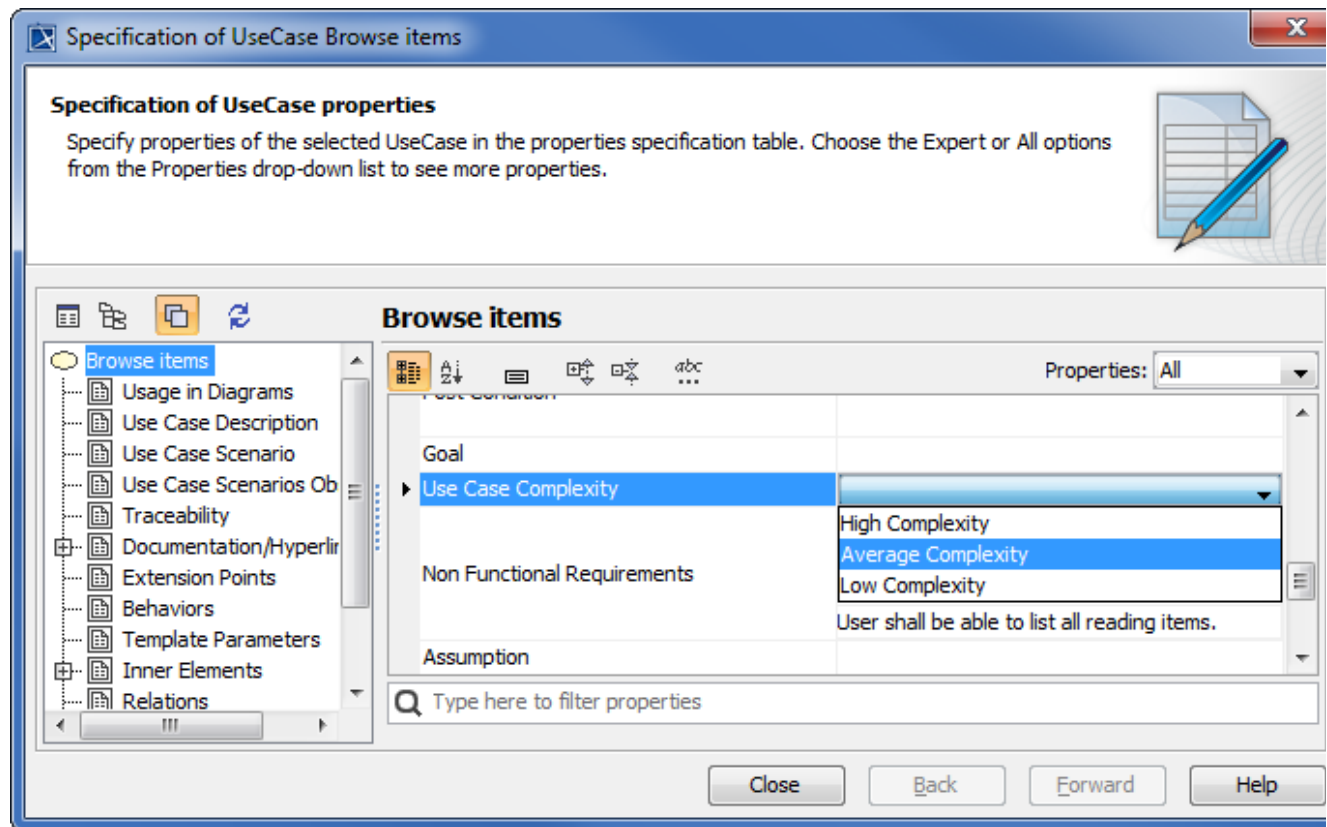
Unadjusted Actor Weights

Unadjusted Actor Weights (UAW) is obtained by counting how many actors there are in each category, multiplying each total by its weight, and adding up the products.

Determining Scenarios and Transactions of Use Cases

The table below lists Use Case Complexity

Use Case Complexity	Litmus Test To Decide Classifications	Weight
Low complexity	1 - 3 transactions	5
Average complexity	4 - 7 transactions	10
High complexity	> 7 transactions	15



Use Case Driven - Use Case Complexity.

Unadjusted Use Case Weights

A transaction is a set of activities, which is either performed entirely or not at all. To determine the number of transactions, you need to count the use case steps. Next, multiply each use case type by the weighting factor and add up the products to get **Unadjusted Use Case Weights (UUCW)**.

Unadjusted Use Case Point

Add UAW and UUCW to get Unadjusted Use Case Point (UUCP): $UUCP = UAW + UUCW$.

Reference Documents

- The Estimation of Effort Based on Use Cases, published by Rational software
<ftp://ftp.software.ibm.com/software/rational/web/whitepapers/2003/finalTP171.pdf>
- COCOMO II
http://sunset.usc.edu/csse/research/COCOMOII/cocomo_main.html