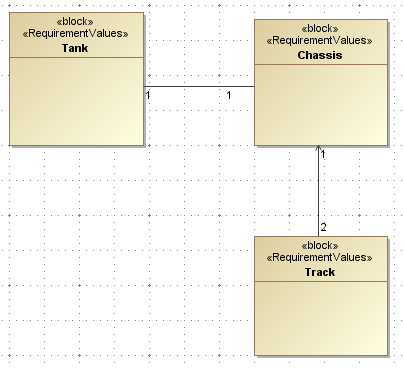
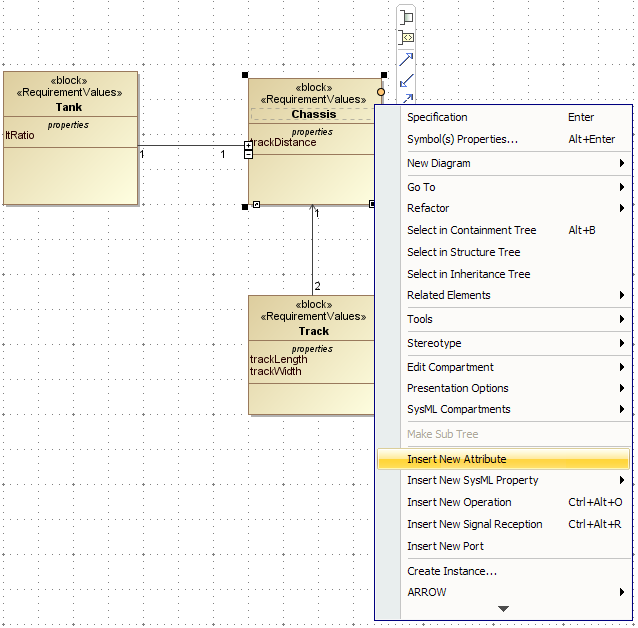
MagicDraw Parametric Diagrams:

This document is available as a guide to demonstrate the process of constructing a parametric diagram in MagicDraw. An example is worked through involving a tank, chassis and 2 tracks. The parametric diagram will help show how the blocks interact to calculate the ltRatio property on the tank. The LTRatio is a ratio that relates the tank’s track length to the width between the centers of each track. This ratio helps identify the tank’s ability to turn, raising concerns if the ratio is too high.

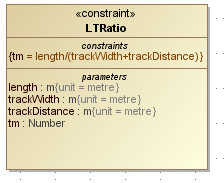
First, we’d like to create a parametric model to represent a tank’s LTRatio. We can represent this simple model as follows:



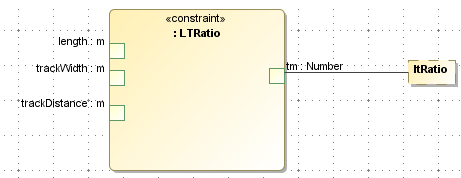
Next, we add the various properties each component maintains as block attributes:

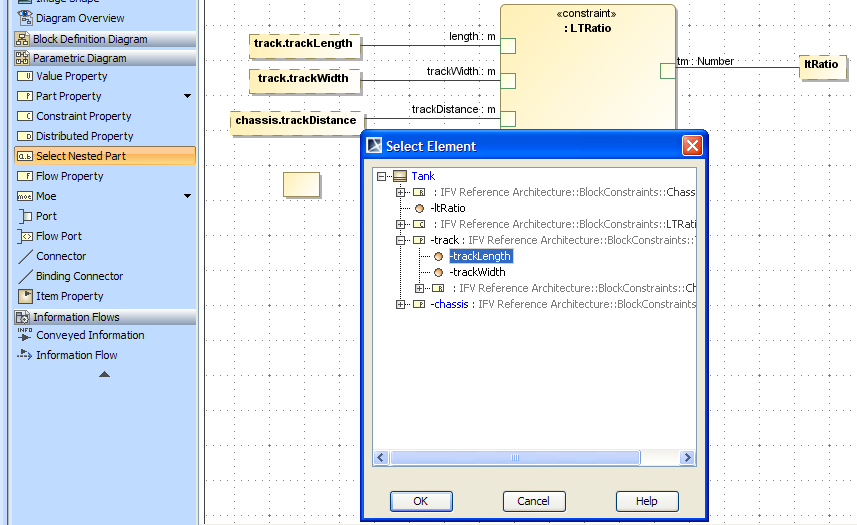


We also use the following block constraint to calculate the LTRatio (tm represents turn mobility):



With our block definition diagram and constraint block, we can now create our parametric diagram. The parametric diagram is constructed within the context of the Tank block. With this scope, we have access to the property ltRation, and we can add our LTRation block constraint to relate the parameters in the equation, as shown below.



The reason there is access to the ltRatio property is because the parametric diagram is being expressed in the context of the Tank block. Now, we’d like to add the properties of the Chassis and Track to relate to the equation input parameters. We can access the properties of these two blocks by clicking the “Add Nested Part” button from the diagram control menu. This concludes the parametric diagram!