

Creo® Behavioral Modeling Extension

OPTIMIZE YOUR DESIGNS WITH EASE

Wouldn't it be great if your computer-aided design software automatically determined the best design for you? Think of the time and effort you'd save.

That's exactly what Creo Behavioral Modeling Extension (BMX) does for you by delivering three key capabilities: design studies, smart models, and an open environment that uses calculated results from external programs.

When you have multiple design objectives to consider, such as how to maintain product strength while reducing material wall thickness, it can be very tedious and time-consuming to manually calculate the optimum values. Even then you can't be sure that you have the optimum design because it simply takes too much time to calculate all of the various possibilities that might work. Creo BMX automates this process for you using design studies. To conduct a design study, you simply define your engineering goals, then define where your design is flexible and Creo BMX automatically analyzes countless iterations before arriving at the best solution. Creo BMX raises the level of design automation from simple geometry creation to a fully engineered solution. All you need to do is pick the best design and move on to your next task.

Creo BMX can also optimize specific features within a design by creating "smart models." Smart models capture design and process information so that the model has the built-in intelligence to actually understand its function. Creo BMX captures this knowledge as a feature, which is automatically evaluated against the requirements as the design evolves. This automation will increase your level of confidence that the design will function as intended the first time. It also means that engineers can focus their energy on developing the design rather than continually checking engineering requirements.



The trial-and-error approach to find the desired cross-sectional area along a curve can be extremely time-consuming, but with Creo BMX, it's fast and easy.

Creo BMX saves you time and effort in many ways. For instance, very often you need to use complex formulas to calculate design variables. Usually, these calculations require third-party tools. Just imagine if your design software automatically read the output from those third-party programs and automatically updated your design? Not only would this save you time, but it would also eliminate the need to manually input values, thereby reducing the risk of errors.

With Creo BMX, this is more than possible – it's easy! Only Creo BMX features an open, extensible environment that enables organizations to integrate diverse external tools into their design process.

Key benefits

- Improve innovation by exploring numerous scenarios that meet your design criteria
- Clearly understand the impact of design changes, and prohibit inconsistent behavior
- Reduce product costs by optimizing your design to meet multiple objectives, such as maintaining a product's strength while reducing its weight
- Save time by automatically iterating your design to meet your design requirements
- Reduce errors by using the results from external tools to drive your design directly, without manually transferring data

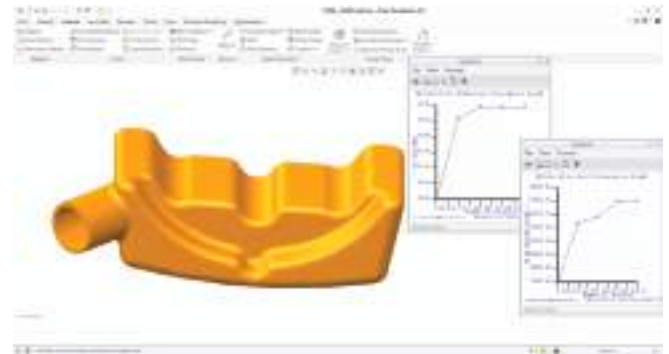
Features and specifications

Objective-driven design studies

- Solve real-world problems and meet a variety of design goals by applying multiple objectives to a design scenario
- Optimize designs to satisfy cost-reducing requirements, such as decreasing a product's weight to minimize costs
- Conduct feasibility studies to determine if there is a feasible solution that meets the design constraints of the model
- Perform sensitivity studies to evaluate "what-if" scenarios to understand the impact of changes
- Graphically review the response of the model to virtual testing, making results easier to interpret
- Apply statistical attributes to dimensions and parameters, enabling analysis of statistical effects on any measurable goal in the model

Smart models

- Adapt to design changes instantly, while preserving the design intent
- Capture, group, and store comprehensive design measurements as analysis features that can drive the design



Creo BMX ensures your design meets its requirements. Here, we can ensure the designed tank will be able to hold the desired volume of fuel.

- Leverage the power of analysis features to ensure that design changes do not alter the design intent
- Flexibly iterate the design, trusting the analysis feature's embedded intelligence to ensure engineering criteria is maintained

Open extensible environment

- Increase design flexibility using calculations from external tools without programming or scripting
- Leverage results from other Creo offers such as Creo Simulate™ or Creo Advanced Simulation Extension

Access engineering information more easily

- Define engineering requirements, such as desired weights, angles of reflection, mass property requirements, assembly connection information, and other measurements
- Capture custom measurements that are not easily dimensioned, such as cross sectional area or light reflectivity
- Apply custom measurements to relations
- Monitor critical design measurements and safety margins against design requirements

Track model performance with analysis features

- Track measurements, such as volume, mass, or minimum clearance, during a structural analysis of solid geometries and quilts

- Measure force and torque while analyzing mechanisms
- Access Creo Simulate parameters, such as stress or displacement
- Use results from external applications to drive analysis features
- Create custom measurements for user-defined analyses

Language support

- English, German, French, Italian, Spanish, Japanese, Chinese (Simplified and Traditional), Russian and Korean

The Creo Advantage

Creo is a 3D CAD solution that helps you build better products faster by accelerating product innovation, reusing the best of your design and replacing assumptions with facts. Go from the earliest phases of product design to a smart,

connected product with Creo. And with augmented reality in each seat of Creo, everyone can easily visualize your designs. In the fast-changing world of the Industrial IoT, no other company can get you to substantial value as quickly and effectively as PTC.

Platform support and system requirements

Please visit the [PTC support page](#) for the most up-to-date platform support and system requirements.

For more information, visit: [PTC.com/product/creo](https://ptc.com/product/creo) or contact your local sales representative.

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