What are T-Splines?

"T-Splines are the next thing...They have opened up possibilities to work with surfaces that were simply impossible before."
-- Eric Allen, Production Manager, DAZ

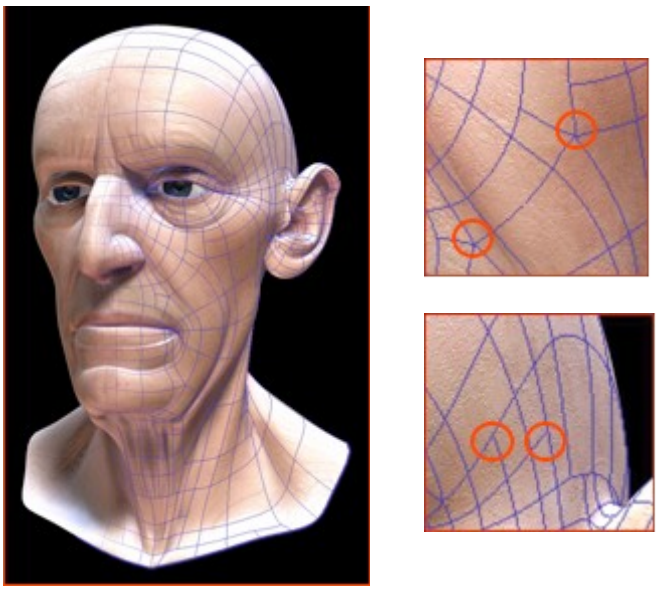
T-Splines: A new type of modeling surface

T-Splines combines classic methods from NURBS and subds with unique timesaving tools of its own to allow modelers to work with models as a single surface instead of as patches.

With its focus on keeping the surface as simple as possible, T-Splines accommodates both simple and complex modeling projects, and excels at organic shapes. T-Splines is used in applications ranging from video games to high-end human anatomy to CAD shape deformation.

Why use T-Splines?

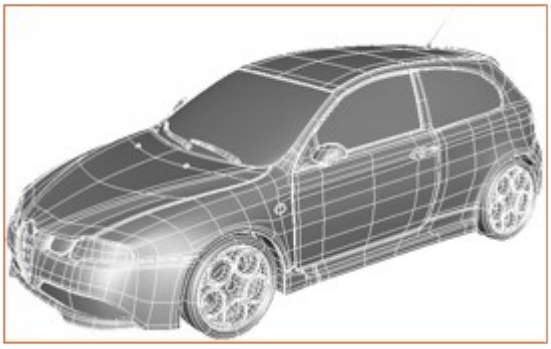
- Add detail only where you need it
- Create even the most complex shapes as a single, editable surface



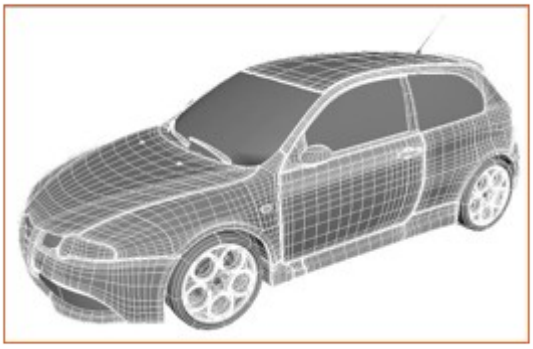
- Create natural edge flow and non-rectangular topology

Fits into your Workflow

T-Splines integrates naturally into existing workflows. Models can be created in T-Splines from scratch or converted from polygons, subdivision surfaces, or NURBS. T-Splines is an ideal surface format for optimization because the entire model can be merged together to eliminate tangency concerns, and additional detail can be added locally without changing the surface. If your downstream applications require a different file format, T-Spline models can be exactly converted to NURBS, with both automatic and user-defined patch layouts. T-Splines can also be exported as a polygon object.



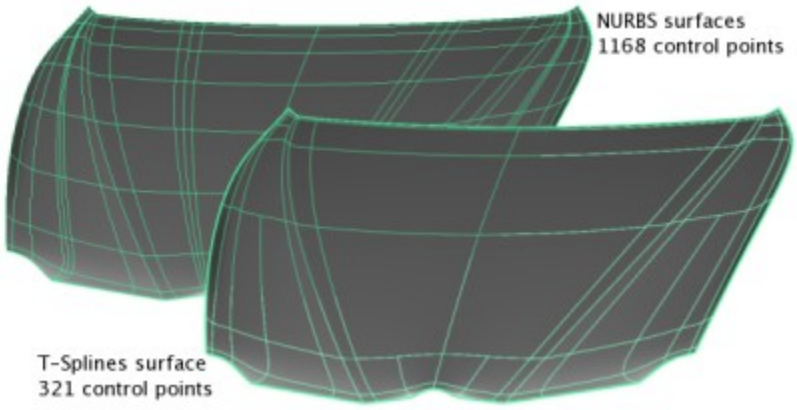
T-Spline car



T-Spline car converted to NURBS

High Level of Control

Create T-Splines surfaces with varying levels of detail, adding control points only where needed. A typical T-Splines surface will have up to 70% less control points than the identical equivalent set of NURBS patches.

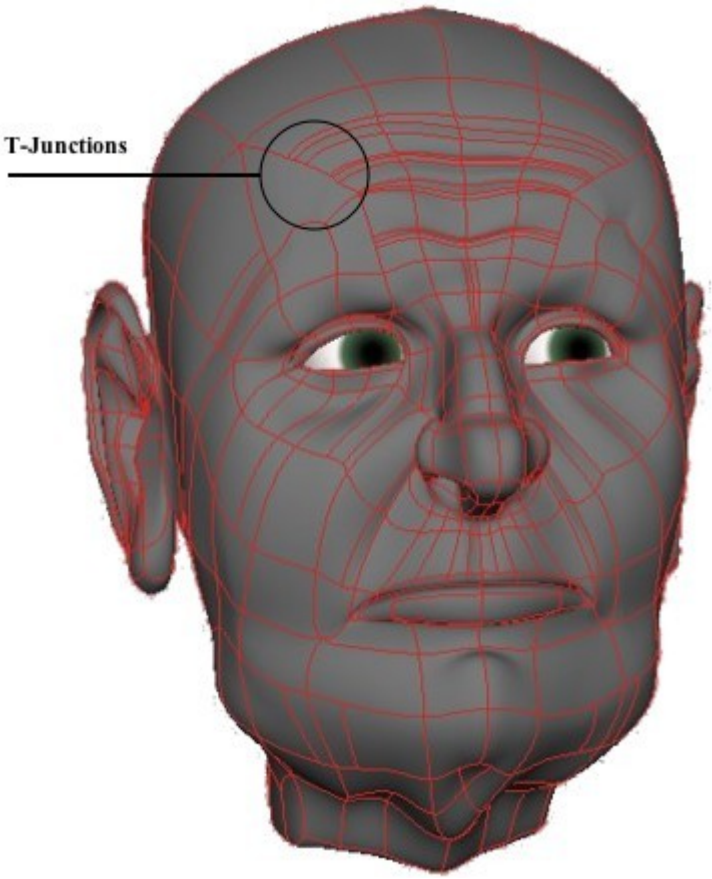


TSplines v. NURBS v. Subdivision Surfaces

T-Splines are like Nurbs, with the difference that you can have partial isoparms.

T-Splines are like SubDs, with the difference that you can insert geometry without changing the surface, and certain kinds of n-gons will shade like quads.

The main difference is T-points. A T-point is a vertex where on one side, there is an isoparm, and on the other side, there isn't.



There is no limit to the number of T-points you can have on a face. This allows lines of detail to end elegantly. Also, because of the way T-points affect the surface, the surface will always be C2 smooth.

How can I use T-Splines?

T-Spline Maya and Rhino plugins offers the biggest time savings to NURBS modelers who could benefit from

- organic models with high detail in some areas and low detail in others
- editable seamless models instead of models comprised of multiple NURBS patches
- greater fine-grained control of their modeling

By incorporating the T-Tools software development kit (SDK) into your own application, you can take advantage of T-Splines' superior properties for reverse engineering, modeling, and pre- and post-processing surface repair before analysis and CAM.