

Direct *Versus* History-Based Modeling

In 1985 **History-Based Modeling** was implemented in Pro/Engineer® and quickly imitated by several CAD products such as CATIA®, SDR IDEAS®, and UniGraphics®. Then came the Mid-Range Modelers such as SolidEdge®, SolidWorks®, IronCAD®, and Inventor® also using the history-based approach.

History-Based modelers require the CAD user to define parameters and constraints when designing a part. The parameters provide relationships to other features in the 3D part, and constraints allow that part to be constructed unambiguously. These parameters, features, and constraints are stored in the order they were built in the history tree and must be accessed through that tree to be changed.

History-Based Modelers have some shortcomings:

- Engineering changes can be time consuming. A new user has to first decipher the history tree so that he can then make changes.
- Each History-based modeler has its own proprietary file format so that models are not easily interchangeable.
- Assemblies can be time consuming to set up and manipulate.
- There is no stand-alone 2D drawing capability.
- Surface models are not interchangeable with solids.

KeyCreator® uses **Direct Modeling** to create and edit 3D Models. The user-defined history tree is not needed. Why? Because KeyCreator creates its own feature tree and thereby allows direct dimension driven editing. In other words parametric, feature-based editing of all geometry is built in.

KeyCreator has **Comprehensive 2D** drafting. KeyCreator automatically produces complete 2D drawing sheets associated to the 3D model. KeyCreator uses levels (aka layers) to manage 2D information, so 2D drafting can be standalone if desired.

KeyCreator Reads Native CAD Files from other CAD software like Pro/E, Solidworks, Unigraphics, CATIA, Parasolids, ACIS, STEP, IGES. *P [A, φ] *EÁ } [A@^æj] *Éh ~ °ch/æâkçh } Aæ } áÁÓUÁ* How about the parametrics (i.e. the history tree of features and constraints)? That's KeyCreator's job to create and update. You can start working right away.

KeyCreator's surface modeling allows you to create a free-form surface model and then convert it to a solid model to facilitate operations like shelling and fillets. Excellent healing tools insure that the part is completely contiguous and accurate. KeyCreator is therefore a TRUE Hybrid Modeler (a hybrid of solid and surface models).



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KeyCreator's assembly modeling can manage all data in a single file by using level management - that invaluable 2D tool which is absent in the other Solid Modelers. For very large assemblies, KeyCreator exports parts in the assembly from multiple part files.

Why KeyCreator then? KeyCreator reads different CAD data formats and immediately manipulates the model, ideal for all engineering and manufacturing applications. **Call us to see a web demonstration today.**

Did you Know That ...

... **Edge Data**, one of the first AutoCAD dealers in the USA, has been providing New England with CAD products and training since 1983?

... **Edge Data** is an Authorized Kubotek Service Center, and provides CAD training for KeyCreator as well as Autodesk CAD software.

... **KeyCreator**, formerly **CADKey®**, was introduced in 1984 as a CAD Package with 3D Digitizing capabilities?

... **Kubotek Corporation** purchased **CADKey** in 2003, renamed the software **KeyCreator**, invested heavily in R&D to add advanced 3D, CAM, and universal CAD translation?

... **Autodesk**, a startup company in 1982, is now a 2.3 Billion dollar company, selling its software into markets ranging from animated graphics to Mechanical, Civil, and Architectural Engineering?

Autodesk Mechanical CAD

AutoCAD Mechanical provides AutoCAD Users with libraries of mechanical parts and utilities for hole charts, BOMs, tolerances and more to facilitate mechanical drafting.

AutoCAD Electrical provides electrical schematics, ladder diagrams, and smart-panel layout support.

Autodesk Inventor is a parametric feature-based solid modeler which is very easy to use and automatically creates 2D layouts. Add-ons to Inventor allow for additional capabilities including **pipe runs, tubing, cable harness, plastic injection mold design, motion simulation, and finite element analysis.** Furthermore, AutoCAD and Inventor, while separate programs, can talk to each other, allowing much flexibility designing and documenting, and collaborating among your customers and vendors to share data.

Call us to see a web demonstration today.

Engineering Case Studies

- **Plastic Bottle** - We build a plastic bottle using hybrid solid-and-surface modeling, then design an injection or blow mold cavity.
- **Fan Design** - We build a 3-bladed fan fixture using helical splines, then easily design the core-cavity.
- **Reverse Engineering** - We import digital camera photos, convert to free-form surface geometry, beautify the design, and convert back to a fully healed solid model.
- **2D to 3D Case Study** - We import 2D and transform into 3D.
- **Cabinet Making** - We start from scratch and build some elegant cabinetry and wood furniture.

Edge Data Services

Edge Data provides comprehensive engineering solutions to our customers. We guarantee our customers' success by guiding them through the selection of CAD, CAM, and engineering products.

CAD, CAM, and CAE Software

Kubotek (Mechanical Engineering, Manufacturing),
Autodesk (Architectural, Structural, HVAC, Plumbing,
Building Information Management, Civil3D)
Autodesk (Mechanical, Electrical)
Finite Element Analysis
Virtual Prototyping with Photo-Realistic Rendering
Scanned Image-to-Vector Conversion

CAD Hardware

Large Format Scanners, 3D Printers, Digitizers

CAD and MultiMedia Training

At our Leominster Training Center or on-site
Custom training, consulting, system installations

KeyShot Rendering

Integrating with KeyCreator, KeyShot delivers revolutionary, interactive 3D rendering. It's real time, for everyone, from anywhere – even your laptop. See instant global illumination and physics-based materials on models come alive, right before your eyes ... with stunning photographic results.

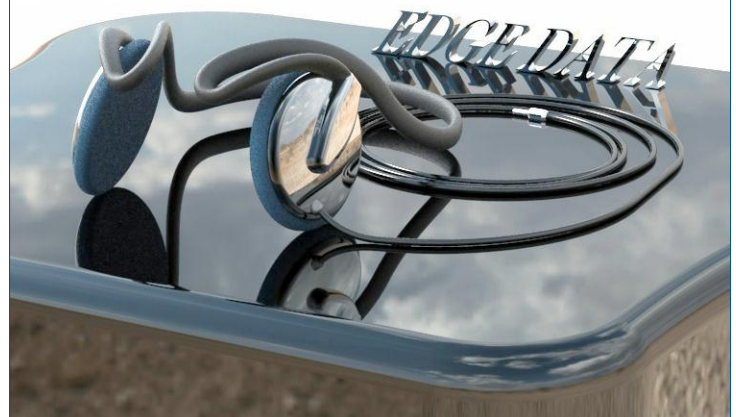
Science based and patent-pending, KeyShot equips you to simply load your models and environments, then see high-tech automation in action. Or scale up and customize completely. From industrial design to marketing photography, satisfy your needs for stellar speed and utmost quality.

So real, you can skip physical prototypes. Designs are rendered on the fly. What used to require daunting effort, time and expertise can now be done by anyone on your team. In minutes, not hours or days.

Call us if you'd like to see a web demonstration today.

**Call us today for additional information.
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