Customer Case Studies for CAD Data Repurposing

Most of our clients that we build 3D models for are all working in different software packages, different environments and even different operating systems. PolyTrans has always been a surprisingly accurate 3D model converter and produces great looking models in many different file formats. We use PolyTrans several times a day and our company couldn't function without it. It is one of the most valuable tools we have and we are very happy with the performance of this software.

- Terry Casper, Amazing 3D Graphics Inc. Custom 3D Modeling & 3D Graphics

Beau Brown, Industrial 3D

Beau Brown of "Industrial 3D" (industrial design visualization) was provided with a large 3D dataset of an oil drilling rig created in SolidWorks and wanted to render it in 3ds Max. Beau used Okino's SolidWorks to 3ds Max conversion pipeline to perform this job quickly and with little user involvement. Beau states, "This model was well over 200 megs and it only took PolyTrans about 5 minutes to open and convert. It turned out great and worked beautifully". The oil rig consisted of 5700 different parts and 1,908,464 polygons. The final rendering consisted of 75% data from SolidWorks and 25% created in 3ds Max. The 7500x7500 pixel image took 9 hours to render in 3ds Max. The final poster was used in "Oil and Gas Journal", a Pennwell magazine. The models and technical instructions were provided by Rowan Companies, Inc. Copyright © 2006 by Pennwell Publishing and Beau Brown.

John Crane, CraneDigital

"I specialize in 3D scientific/technical illustration and animation. A customer needed to transform a 3D spectrometer model created with Unigraphics into convincing marketing material. Okino's CEO, Robert Lansdale, worked closely with me developing a custom solution for the specific conversion process that I needed. After trying a direct IGES import through two other leading applications, PolyTrans produced the highest-quality results with the most control over surfacing, smoothness, and tessellation. Without PolyTrans I would not have been able to meet the tight timeline. It was indispensable. I've since used PolyTrans for countless projects, moving seamlessly between 3ds Max, LightWave and XSI. PolyTrans handles Pro/E files extremely well. With PolyTrans, moving between different worlds is a reliable, 'promis-able' task. Without it my life would be far more difficult". Hach spectrometer model and image copyright © 2006 CraneDigital, www.cranedigital.com.

Carl A. Johnson, Bechtel National, Inc

"I specialize in developing industrial animations and was provided with a large data set of 400 DXF CAD files to convert into LightWave. Okino's software was able to batch convert all the files overnight, and using the polygon reduction tools I was able to bring the resulting polygon count down to a manageable 3 million polygons. Robert Lansdale of Okino has been a great help by modifying the LightWave export plug-in, giving me great output flexibility". Copyright © 2006 Bechtel Group Inc.

Boris Rabin, NASA/Ames Research Center, FutureFlight Central

"We purchased PolyTrans and used it for 3D data conversion and optimization of datasets created for the NASA MER space program (Mars Exploration Rover Mission). It is fantastic software. My colleagues at another NASA center spent days using three software packages on what took me 15 minutes using PolyTrans alone (polygon reduction in batch mode worked like a charm). I just wanted to thank you for creating such a great tool". Copyright © 2006 NASA/Ames Research Center.

Pieter Suur, Suur Graphics

"As a technical 3D illustrator and animator I often work with different applications. My customer presented me this '*Xiria Ring Main Unit* as '*One Space Designer*' CAD files. To this data I had to add other 3D parts I made myself from Form'Z on the Mac and Rhino on the PC. I used Okino's PolyTrans-for-Maya product to effortlessly translate all this data directly into Maya where I performed my visualizations and animations. I found that the speedy data conversion process meant that I could spend much more time and attention on the final image". Copyright © 2006 Suur Graphics & Eaton Electric B.V.

Arnold Gallardo, Gallardo Associates

"My client, who owned an older building in SOHO NYC wanted me to visualize how it looked in the 19th century. I modeled the building in true Space and in 3ds Max, then used PolyTrans to perform a seamless conversion into Lightwave. The scene consisted of 700k polygons, 46 textures, 11 lights and 5 cameras. As an AEC visualization expert I deal with many different sources, from CAD/CAM data, to Illustrator files, to DWG/DXF, as well as from several 3D applications. Thus, I have a great necessity for relying on high fidelity 3D file translation/conversions -- PolyTrans has served me well in this regard. My experience with Okino's technical support has been wonderful whenever I encountered a complex problem during production work". Copyright © 2006 Arnold Gallardo.

Large, Professional User Base

PolyTrans, and its related elder brother NuGraf, are used world wide by thousands of professional 3D users. Several thousand of the most notable are listed at "http://www.okino.com/conv/users.htm", and a very small, select few below:

Animation, Production Studios, Digital Effects

Aldis Animation, Animal Logic, Animation Science, Applied 3D Science, Argonaut, Arkitek Studios, Aardman Animations, BBC, Blur Studios, BrainCell Pictures, Broadsword Interactive, CBC Canada, Cambiner, CGI, Cirring Interactive, Cinemagic, Cinesite, Crambambouli, Creatures, Criterion, Crush Interactive, Dawn Interactive, Deutsche tv, Digital Anvil, Digital Artworks, DNA, Dream Team, Disney Interactive, Digital Animations, DreamWorks Interactive, Encore Video, Enthed Animation, Entertainment Design Workshop, Evermore Entertainment, Flying Spot, FOX Studios, Framestore, Frantic Films, Fun Key Studios, Gigawatt Studios, Granda tv, Grollier, Head Games, Hiro Graphics, HumanCode, ICON, ILM, Infobyte, Imagine Interactive, In-Media, Interactive Media, Lionhearth, Looped Picture, Marathon, MindInMotion, Mirashade, National Geographic tv, NBC, NFB Canada, Pacific Title, Paradigm Productions, Pixel Liberation Front, P.I.X.A.R, Praxis Films, Quantum 3D, Rainmaker Digital Pictures, Red Lemon Studios, Riot, Sony Interactive, Tangerine Films, Tokyo Broadcasting, TOSC, Toybox, Vantage Point Imaging, VFX Interactive, Viewpoint Digital, Vivid Group, Visual Approach, Walt Disney, Warner Brothers, Weta Digital, Westwood Studios, WildTangent.

Corporate Users

3M, Acuity, Ademco, Alcoa Aluminum, ATI, Aurora Biosciences, BASF, Baxter Health Care, Beumer Maschinenfabrik, Caterpillar, Coca-Cola, Corel, Daimler Benz, Danfoss, Discreet Logic, Dolby Labs, DPS, EDS, Eastman Kodak, Edmunds, Evans and Sutherland, FedEx, Flight Safety, Fuji, Fujitsu, GE, GE Medical, GE Lighting, Google, GTE, Gudant, Hitachi, Home Shopping Network, Honeywell, HP, Hummingbird, IBM, Informix, IKEA, IMSI, Intel, Johnson & Johnson, Knott Labs, Kubota, LEGO, Kimberly-Clark, LightWork Design, Logitech, Lucent, Mattel, Matrox, McGraw Hill, McLaren Cars, MIT Media Lab, Microsoft, Mitel, Moog, Motorola, NEC, NHN Corp, Nikon, Nippon T&T, NRC Canada, National Instruments, Nokia, Nippon Systemware, NVIDIA, Omoforme, Panasonic, Panavision, Philips, Pitney Bowes, Proctor & Gamble, Raychem, Rockwell, Sankyo, Sanyo, SDRC, Seiko/Epson, Shell, Siemens, SGI, Sony, Spacetec, Steelcase, SUN, Tesco, Time Warner, Toshiba, TRW, Whirlpool, Walmart.

Aerospace, Defense, Government Agencies

Airbus, Argonne NL, ATK Missile, Aerospace Corp, Australian DoD, Ball Aerospace, BAE Systems, Bombardier, Boeing, Cessna, Colt, CSC Defense, CIA, Cubic Defense, DaimlerChrysler Aerospace, DCIEM, EADS, F.A.A, General Dynamics, German Aerospace, GM Defense, Goddard Space, GreySstone, Halliburton, Hughes Aircraft, IFT Aerospace, Japan Space Agency, JPL, Kongsberg Defence, L-3 Communications, LLNL, Lockheed-Martin, LANL, Mitsubishi, NASA, NATO, Northrop Grumman, Raytheon, Rolls-Royce, Sandia National Labs, Royal Netherlands Army, Sikorsky, SPAR Aerospace, Swedish Defense, Swales Aerospace, Tenix Defense, Thales, United Space Alliance, United Defense Industries, United Techologies, Vector Aerospace, USGS, U.S Air Force, U.S Army, U.S DoD, U.S National Guard, U.S Navy, U.S Secret Service.

Automotive, Engineering and Manufacturing

Alcon, All Points Engineering, Amtec Engineering, Audi, Brass Craft, British Aerospace, CAE Electronics, Corsider, Cumberland, DaimlerChrysler, DME, DOW Chemical, Dodson & Associates, Dyson, Eastman Woodworking, E-OIR Measurements, Exponent Failure Analysis, Festech, Festo, FordFront, Ford, GM, Graco, HDR, Honda, Hunter Engineering, Hyundai, John Deere, Lathrop Engineering, LEGO Engineering, Man AG, MD Robotics, Motoman Robotics, Mitsubishi, Nicholson Manufacturing, Nissan, NK-EXA, ORCA Engineering, PDQ, Progressive Engineering, Queensland Manufacturing, Quartus, R Squared, Roland, SAAB, SIP Info, Sauder Woodworking, Smith International, Spin Concurrent, Teledyne Brown, Tiltan Engineering, Toyota, Veridian, Volkswagon, Volvo, Watkins Manufacturing.

3D Game Development Companies

Accolade, Acclaim, Atari, Avalanche, Beyond Games, Blizzard North, Blue Sky, Boderbund, Climax, Crystal Dynamics, Dill Pixels, Dragonlore, EA, Ensemble Studios, Epic, Fasa, Funcom, High Voltage Software, id Software, Immersia, Intelligent Games, Interplay, Jen Storm, Kaon, Kodiak Games, Leaping Lizard, LucasArts, Mak, Microforum, MegaMedia, Micoprose, Mythic, Namco, Nintendo, Nocturnale, Nol's, Origin, Piranha Bytes, Rainbo Studios, Raven, Ronin Games, Reflections, Rockstar, Saffire, Secret, Sega, Software, Sierra On-Line, SingleTrac, Spacetime Arts, SPGS, Sports Simulation, Stage 22, Stormfront Studios, Ubisoft, Universal Interactive, Virgin Interactive, Virtual World Entertainment (MechWarrior 3), Williams/Bally/Midway, Z-Axis, Zombie VR Studios.

Common Solutions and Benefits

- Allows all meshes, trimmed NURBS, vertex attributes, materials, shading parameters, texture map types, lights, cameras, hierarchy and animation to be imported, stored, translated and exported with high accuracy and fidelity. Creates "Render Ready" models.
- The industry's choice for over 18 years to convert from every major 3D CAD program and BREP based (crack free) solids modeling file format to all major downstream applications (such as 3DS MAX, Maya, XSI, LightWave, trueSpace, Cinema-4D, OpenFlight) & many more 3D formats.
- Import and compose 3D scenes from a plethora of 2D/3D file formats then render out to high quality images for print media, WEB presentations, training manuals, or marketing brochures.
- A long-standing industry standard and favorite for cross-converting between all major animation packages and 3D file formats with true robustness & quality. The built-in Okino "Arctic" toolkit allows for precise, tolerance-based animation & skeleton/skinning conversions.
- Publish to WEB streaming file formats such as OpenHSF, SW3D, U3D, VET, VRML1+2 & XGL.
- With support for almost every major 3D & 2D bitmap file format, an integrated bitmap editor, and video file playback, PolyTrans forms the basis of an ideal digital file management tool.
- Well known for processing huge files quickly, such as 40MB to 300MB IGES, DWG, DEM and VRML files (low memory usage). Optimized since its inception to handle very large datasets, such as 500,000 node scenes and millions of polygons.
- A large and established professional user base has ensured PolyTrans remains a dependable, robust and highly featured translation system.
- Automatic 2D bitmap conversion between formats supported by each 3D file format.
- Attacks and overcomes the hardest conversion problems.

Major PolyTrans Features

- The industry standard for bidirectional scene, animation, skeleton & skinned mesh conversion between 3DS MAX, FBX, Maya, XSI, Soft-3D, LW, DirectX, U3D, and many more programs.
- Acts as a "stepping stone" to allow for massive CAD assemblies to be downsized in PolyTrans first before import into downstream animation/multimedia applications.
- Converts 3D NURBS surfaces, NURBS curves and spline shape data between compatible 3D file formats and application programs.
- Photo-realistic rendering, material editing, texture parameter editing and scene composition (ray tracer in Okino's NuGraf only). Handles very large CAD datasets.
- Excellent, built-in polygon reduction system written specifically for large CAD datasets.
- Robust polygon processing tools: weld, auto-unify, smoothing, remove redundant polygons, merge triangles into quads, and polygon reduction.
- Integrated multi-media editor & viewer with support for almost all major 2D file formats.
- OpenGL shaded views, with real-time lighting & object texture mapping, real-time interactive object/camera/light manipulation, textured backgrounds and multi-threaded redraws.
- Special NVIDIA & ATI accelerated video card support: real time bump & environment mapping.
- Intuitive & productive batch converter for 3D scenes or 2D images, with polygon processing.
- "PolyTrans-for-3dsmax" & (optional) "PolyTrans-for-Maya" native plug-in versions of PolyTrans.
- VBScript & JScript embedded languages for converter automation & 'NuScript' for rendering.
- Third party custom importers/exporters & system plug-ins via PolyTrans plug-in SDK. Write your own converter, or a UI plug-in such as a renderer, modeling system, uv-map editor, or anything.
- Make the PolyTrans converters appear inside your 3D application using the PolyTrans!ProServer. No cost SDK from Okino. Complex interface, simple integration.
- Export scenes to Okino's NuGraf program for fast, photo-realistic scanline or multi-threaded ray trace rendering, animation and material/texture editing. Upgrade from PolyTrans to NuGraf at a low cost. PolyTrans is a subset of the NuGraf software.
- NuGraf only: Caustics, an amazing lens flare system, sunlight calculator & polygon-level tools.
- Complete feature list, file formats, brochures, user list & demos on the Okino WEB site.

Okino Computer Graphics — 3D RENDERING, VISUALIZATION & MODEL TRANSLATION SOFTWARE

Available from:

3397 American Drive, Unit # 1. Mississauga, Ontario, L4V 1T8
Toll Free: 1-888-3D-OKINO, Tel: (905) 672-9328, Fax: 905-672-2706
WEB: http://www.okino.com, Email: sales@okino.com

PolyTrans v4

PolyTrans®

By Okino Computer Graphics

Lightwave® (original model)

Caligari® trueSpace®

Browse, View, Translate, Render
All Major 3D File Formats

Viewpoint® VET® Streaming

"ApeBot" Model Copyright © by Newtek, Inc. and Matt McDonald, Vision Scape Imaging

Macromedia® Director® and Shockwave-3D® Streaming

Write your own custom plug-ins, or integrate using COM

3D Scene, Animation, CAD, NURBS & WEB Streaming
Translation Software For Microsoft® Windows®

(Runs on Apple Macintosh using a Windows Emulator)

The One Stop Industry Standard Solution For Creating Seamless Conversion Pipelines
Between All Major 3D CAD, VisSim and Animation/D.C.C Packages + 3D File Formats.
A Powerful, Robust, Cost Effective, Trusted Productivity Tool For 3D Professionals.
Over 17 Years of Development, Refinement & Customer Usage.

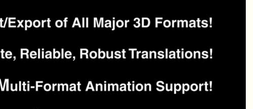
Universal Import/Export of All Major 3D Formats!

Accurate, Reliable, Robust Translators!

Multi-Format Animation Support!

Creates "Render Ready" Models!

3DS MAX®, XSI® & Maya® Native Plug-Ins!



"Niagara" Project. Pro/E model by Anders Karlsson and Peter Fredh. trueSpace Rendering by Lars Magnusson, Rand Worldwide. Copyright © Parker Hannlin AB.

Supported 3D File Formats & Example Imagery

Please refer to "*http://www.okino.com/conv/filefrmt.htm*" for current file support information and the full list of supported 2D bitmap image & video file formats.

Pro/Engineer File Rendered With NuGraf

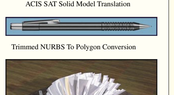
NuGraf File Rendered With 3DS MAX

Concept Design Using IGES Files

ACIS SAT Solid Model Translation

Trimmed NURBS To Polygon Conversion

Ray Traced IGES File From Pro/Engineer



Building Model From SDRC Master Series

Converters listed in red are sold as optional add-on modules.

3D File Format	Ext	Imp	Exp	Mat	Hier	a/v	L&C	NURBS	Anim	Skin	Notes
3D Studio r4	.3ds	♦	♦	♦	♦	♦	♦		♦	♦	N1
3ds Max	.max	♦	♦	♦	♦	♦	♦		♦	♦	N2
Acclaim MoCap	.amc, .asf	♦	♦	♦	♦						
Apple 3DMF	.3dmf	♦	♦	♦	♦	♦	♦		♦		
BioVision MoCap	.bvh	♦	♦								
DirectX	.x	♦	♦	♦	♦	♦			♦	♦	N4
DXF	.dxf	♦	RGB								
DWG	.dwg	♦	RGB						(supports up to AutoCAD v2006)		
Electric Image FACT	.fact	♦	♦	♦	♦	♦	♦		(anim. to EIAS via Lightwave format)		
FBX (Kaydara)	.fbx	♦	?	♦	♦	♦	♦		♦	♦	
GameExchange2 (Mirai)	.gxf	♦	♦	♦	♦	♦	♦				
HOOPS HSF	.hsf		♦	♦	♦	♦	♦				
Houdini, geometry	.geo					♦					
Illustrator (Adobe)	.ai	♦	(for 2D spline shape import)								
Inventor2 (SGI),.VRML1	.wrl	♦	♦	♦	♦				♦	♦	N5
Lightscape	.lp		♦	♦	♦	♦					
Lightwave 5.6 & 7+	.lwo, .lws	♦	♦	♦	♦	♦	♦		♦	♦	N5
Maya, Autodesk	.ma, .mb	♦	♦	♦	♦	♦	♦	♦	♦	♦	N6
Minolta Vivid 700	.cam	♦	♦								
Okino Text Dump	.txt		♦	♦	♦	♦	♦	♦	♦	♦	N16
Okino *Transfer File Format*	.bdf	♦	♦	♦	♦	♦	♦	♦	♦	♦	N7
OpenFlight	.flt	♦	♦	♦	♦	♦	♦		♦	♦	N8
OpenGL C Code	.c		♦	♦	♦	♦	♦				N13
POV 2.0 & 3.0	.pov		♦	♦	♦	♦	♦				
Pro/E "Render File"	.slp	♦									
Protein Database	.pdb/.mol	♦	(molecular database import; including ribbon & backbone support)								
Renderman RIB	.rib		♦	♦	♦	♦	♦	♦	♦		N10
Renderware	.rwx		♦	♦	♦	♦	♦				
Rhino/OpenNURBS	.3dm	♦	♦	♦	♦	♦	♦		♦	♦	
Shockwave/Director	.w3d		♦	♦	♦	♦	♦		♦	♦	N15
Softimage-3D	.hrc	♦	♦	♦	♦	♦	♦		♦	♦	N11
Softimage-XSI	.xsi	♦	♦	♦	♦	♦	♦		♦	♦	N3
StereoLithography	.stl	♦	♦								
Strata StudioPro v1.75	.vis		♦	♦	♦	♦	♦				N12
TrueSpace v2+v6	.cob, .scn	♦	♦	♦	♦	♦	♦				
U3D	.u3d		♦	♦	♦	♦	♦		♦	♦	
USGS DEM	.dem	♦									
Viewpoint VET	.mts/.mtx	♦	♦	♦	♦	♦	♦				
VistaPro	.dem	♦									
VRML 1 & 2	.wrl	♦	♦	♦	♦	♦	♦		VRML2		
Wavefront OBJ	.obj	♦	♦	♦	♦	♦	♦		Import		
XGL (RealityWave)	.xgl	♦	♦	♦	♦	♦	♦		♦	♦	N15

Ext = File extension, Imp = Import, Exp = Export, Mat = Materials & texture maps, Hier = Hierarchy, u/v = Texture (u,v) coordinates, L&C = Lights & cameras, Anim = Animation, Skin = Rigid/Smooth Skinning.

Optional Add-On CAD Modules

Okino has been well known for its CAD file format support since 1988 when it first began working towards IGES and DXF. Version 4 brings to PolyTrans the most complete line up of CAD file support at a very reasonable cost. The "CAD/Pack" includes DWG, Autodesk Inventor, Okino's IGES 5.3, Solid Edge, SolidWorks. The "Granite/Pack" includes ACIS SAT v7, IGES (BREP solids), Granite (*.g), Parasolid, Pro/DESKTOP, Pro/Engineer, STEP AP203 & AP214 and VDA-FS. Additional CAD importers are available for "JT", "Spatial CATIA v5" and "Spatial CATIA v4". All are import formats except for Okino IGES which can export trimmed NURBS and polygon meshes. No resident CAD packages are required.

N1: Object & camera animation, instancing of hierarchy, animation tangent computation.
N2: Requires resident copy of 3ds Max so that PolyTrans-for-MAX may plug in directly to 3ds Max.
N3: Includes the PolyTrans-for-XSI native plug-in system, and independent .xsi import/export converters.
N4: Object animation support (no other animation possible in .X file format). Skinning in PolyTrans v4.
N5: Supports LW 5.6 and 6.5 or newer, incl. object & camera animation. LW 6.5+ includes uv & vertex colors.
N6: Native plug-in version of PolyTrans-for-Maya. Requires resident copy of Autodesk Maya.
N7: Okino .bdf format used to move databases between PolyTrans, NuGraf, 3ds Max & Maya.
N8: Flip-book style animation for export converter.
N10: Extensive material and texture attributes embedded in file as comments.
N11: Also directly reads/writes Softimage databases; performs automatic bitmap conversion.
N12: Import: extracts embedded images to disk. Export: embeds texture images into .vis file.
N13: Optimized tri-strips, vertex lists, display lists and much more.
N15: XGL is exported by many CAD packages. It is a good alternative to import into PolyTrans.
N15: Requires copy of Director 8.5 for publishing. Includes PolyTrans-for-Director native plug-in for Director.
N16: Dumps out entire PolyTrans database to text file. Provided in source code for PolyTrans SDK.
N17: Since the X3D file format is still evolving, the Okino X3D converters are in ongoing development.