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## Faculty/Staff Technology Support Initiative: Next Engine 3D Scanner

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Faculty/Staff Technology Support Initiative Application Form  
2013--2014 Budget Year  
State University of New York  
College at Brockport

*Please type or print clearly. Append a proposal narrative and budget (restricted to two page maximum)*

<b>Proposal Title: Next Engine 3D Scanner</b>	
<b>Applicant Information:</b>	Applicant Phone: 2742
Name: Kim Myers	Title: Digital Repository Specialist
Department/Division: Library, Information and Technology Services	Funds Requested by Proposal: \$ 4,985 - 498.50=4486.50 requested
<b>Sponsor: Department Chair/Unit Head</b>	Sponsor Phone: 2141
Name: Mary Jo Orzech	Dept. matching funds (10%) authorized: \$ 498.50
Department/Division: Library	If awarded, departmental matching funds to be transferred from Acct.#:
<p>What items/services do you propose to purchase with the grant funds? Specify the vendor and estimated cost of each item.</p> <p>Next Engine 3D Scanner \$2,995 MultiDrive Scanning Platform \$995 ScanStudio HD PRO software \$995 <a href="http://www.nextengine.com/">http://www.nextengine.com/</a></p>	
<p>Briefly describe how the items/services to be purchased <u>innovate</u>, expand and/or enhance the technological capabilities in your area of teaching, research, or work responsibilities:</p> <p>The Next Engine 3D Scanner would enhance and promote the use of the Makerbot Replicator 3D Printer that has recently been purchased for use by students and faculty who wish to explore this innovative technology and incorporate it into the curriculum. The scanner increases the 3D printer's usefulness by allowing existing objects to be scanned and printed, rather than just designed from scratch. The MultiDrive Scanning Platform further automates and increases ease of use of the process. The upgraded software increases the speed and ease of the scanning process. With creator's consent, object plans can then be added to the institutional repository, Digital Commons@Brockport.</p>	
<p>Briefly state how you expect the technology supported by the award to benefit Brockport students through improvements in teaching, research, or efficiency of program administration:</p> <p>The scanner, in conjunction with the 3D printer can be used by many students, to enhance their class presentations, create prototypes of models for business classes, conduct research and produce visible output, and also creatively be used by theatre, art and other classes.</p>	
Approvals and Signatures:	
Chair/Unit Head: <u>Mary Jo Orzech</u>	Date: <u>2/28/2013</u>
Dean/Vice President: _____	Date: _____
<p><b>Committee Use Only:</b></p> <p><input type="checkbox"/> Proposal Recommended for Funding      <input type="checkbox"/> Proposal Not Recommended for Funding</p>	

Send through chair/staff unit head to dean (faculty) or division vice president (non-academic staff) by February 28, 2013; dean/NP to P. Michael Fox (618 Allen Admin. Bldg.) by March 21, 2013. This form is available on-line at <http://www.brockport.edu/ctc/grant>.

# NEXTENGINE 3D SCANNER HD

TECHSPECS

## ARCHITECTURE

Measurement System	NextEngine proprietary MultiStripe Laser Triangulation (MLT) technology. Patents Pending.
Source	Twin arrays of four, Class 1M, 10 mW solid-state lasers with custom optics. 650 nm wavelength.
Sensor	Twin 3.0 Megapixel CMOS image sensors.
Photo Surface	Optically synchronous 7-color surface capture for precision-locked geometry correlation.
Photo Lighting	Built-in spatially diverse whitelight texture illuminators with tri-phosphor, wide color gamut.
AutoDrive™	High-precision rotary servo positioner, auto-incremented under scanner control. 20 lb capacity.
PartGripper™	Universal part holder to adjust height, angle, and orientation of capture. 10 lb capacity.

## SOFTWARE

ScanStudio HD™	Software to Scan, Align, Polish, and Fuse 3D Models. High-performance OpenGL 3D viewer.
SolidWorks Integration	Scan inside SolidWorks (Office Premium 2007 + later). Click to toggle between scanning/design.
Native File Format	SolidWorks + NextEngine co-developed native format. No import or export needed.
Standalone Use	ScanStudio also works outside SolidWorks for creation of standard-format scan-output files.
Format Options	Scan data can be output as mesh file formats: STL, OBJ, VRML, XYZ, U3D, and PLY files.
File Size	20MB for typical model, based on 10 facet scans.
Modeling Tools	Assemble views into a model conveniently with built-in Smart Alignment and trim tools.
ScanStudio HD™	Points-to-Mesh solution. Drives scanner and builds 3D mesh models. Standard
ScanStudio HD PRO™	Delivers 2X scan speed, 4X raw point data, and offers Large Object (23" x 17") mode. \$995
ScanStudio CAD TOOLS™	Points-to-NURBS solution. Adds surfacing and spline output to speed CAD modeling. \$995
RapidWorks™	State-of-the-art Points-to-CAD engineering tool. Build solid models with feature trees. \$2,995

## PERFORMANCE

Object Size	No preset limit. Objects larger than field can be composite-captured with supplied software.
Field Size	5.1" x 3.8" (Macro) and 13.5" x 10.1" (Wide). ("Soda can" and "shoebox" sizes, respectively.)
Capture Density	Capture density on target surface is up to 160K points/in <sup>2</sup> (Macro) and 22.5K points/in <sup>2</sup> (Wide).
Texture Density	400 DPI on target surface in Macro Mode and 150 DPI in Wide Mode.
Dimensional Accuracy	±0.005" in Macro Mode and ±0.015" in Wide Mode.
Acquisition Speed	50,000 processed points/sec throughput. Typically 2 minutes per scan of each facet.
Typical Datasets	Typical small models are a quarter-million points, after oversampling and optimization.
Environmental	Desktop use under ordinary office lighting. No darkroom or special backgrounds required.

## GENERAL

Minimum Requirements	2GHz Dual Core, 2GB RAM, 256MB graphics, Windows XP / Vista / 7.
Recommended System	4+ GB RAM, 512+ MB graphics. 64-bit Windows XP/Vista / 7.
Interface	USB 2.0 high-speed interface. USB cable included.
Power	100 – 240 VAC built-in worldwide auto-switching power supply. AC cable included.
Eye Safe	Beam is about 1/1000th brightness of a laser pointer (but avoid looking into beam).
Tripod Mount	Stainless steel 1/4" 20-thread standard screw mount for tripod setups.
Size	Compact 8.8" x 3.6" (letter size) desktop footprint. 10.9" high. Approximately 7 lbs.

NEXTENGINE DESKTOP 3D SCANNER

MODEL 2020i

1.0A  
50/60HZ

100 - 240VAC

USB 2.0

MANUFACTURED BY NEXTENGINE INC. SANTA MONICA, CA  
WORLDWIDE PATENTS PENDING ASSEMBLED IN MALAYSIA

FC

UL LISTED  
TYPE  
TSW52X  
14550

CE

TRADE SHOWS ONLY. WARRANTY VOID IF OPENED.