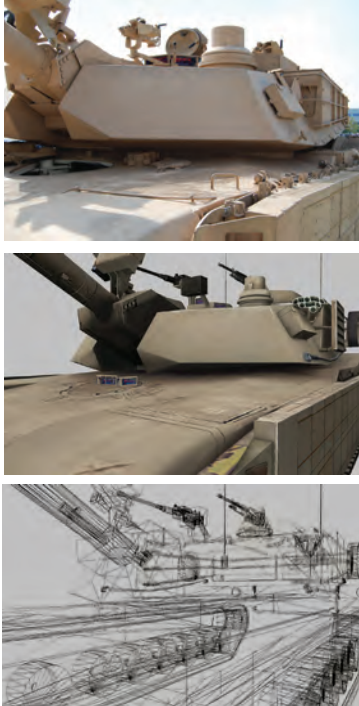




Photo-Specific and Photo-Realistic Hybrid 3D Models



MetaVR's M1A2 TUSK model, which is comprised of 12,505 polygons and 16 photo-specific textures (112 MB of textures). The images on the left show a photograph of the turret area of the actual vehicle (topmost), with textured and wireframe views of the same area on the model.

A subset of the MetaVR 3D content libraries includes 3D entity models built using photographically-specific textures. Such models contain a one-to-one mapping of photographic elements to unique geometry such that there are no repeating textures. Other entities are a hybrid of photo-specific and photo-realistic textures.

MetaVR has created a photo-specific model of the M1A2 Tank Urban Survivability Kit (TUSK) vehicle. This model was based on 430 high-resolution digital photographs MetaVR took of the actual vehicle, which resulted in 1.45 GB of source data. This source data and MetaVR's photo-specific model standard were used to create the 3D model. The resulting M1A2 TUSK model maintains real-time performance in MetaVR's Virtual Reality Scene Generator™ (VRSG™).



Photograph of the M1A2 TUSK vehicle, taken by MetaVR.

MetaVR's photo-specific 3D content standard specifies requirements for the required source data and resulting 3D model complexity, to provide a high degree of realism for real-time simulations. The specification consists of:

- High resolution digital photographs of the vehicle taken during a recent public military exhibition of perspectiveless views of all major visible exterior surfaces at distances between 0.5 meters and 5 meters from the vehicle, and three-quarter views of the vehicle to provide overall context for detailed images.
- Resulting composite texture maps of .004 meter texel resolution or better.
- Geometry of a minimum of 12,000 polygons, and 5 levels of detail (LODs) of geometry and textures.
- Three damage states: disabled firepower, disabled mobility, and catastrophic damage.
- Animated tracks and/or wheels with resulting particle-based dust trails and vehicle exhaust.
- Modeling of all light-emitting features.
- Material code mappings for major components to support time-of-day dependent physics-based thermal models (which may be encoded within the textures).
- A resulting 3D model with a set of 2048 x 2048 pixel texture maps whereby each photographic element is assigned to a unique geometric surface (some limited reuse of textures is applicable as in the case of multiple road wheels).

MetaVR Photo-Specific and Photo-Realistic Hybrid 3D Model Library

MetaVR includes the following 3D military entity models photo-specific and hybrid (photo-specific and photo-realistic) models. Note that the B-2, Buffalo, Hunter UAV, MiG-29, and ZIL131H models shown below are “hybrids” in texture makeup; they are approximately 75-80% photo-specific, with the remaining textures photo-realistic.



B-2 USAF



Black Eagle



Buffalo



Hunter



M1A2



M1A2 TUSK



MiG-29 RAF



T-72 M1



T-72 M4CZ



T-80 UM1



T-90



ZIL131H

For MetaVR customers who are current with product maintenance, MetaVR accepts requests to build models not currently available in its 3D military entity library at no additional charge.

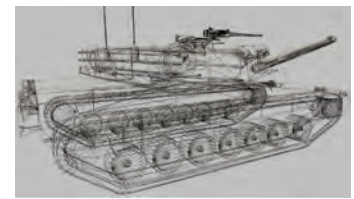
To the right is a set of images from which you can compare a photograph taken of the M1A2 TUSK (leftmost) with textured and wireframe views of the M1A2 TUSK model.



Photo of M1A2 TUSK



M1A2 TUSK model



Wireframe view of model

For more product information, pricing, and ordering, see MetaVR's web site at www.metavr.com or send email to sales@metavr.com.

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