3D in Augmented Reality

Martin Lechner
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AR Standards

OGC ARML 2.0 SWG
mobile visual AR                descriptive format                scripting components
ARML 2.0 SWG

ARML 1.0 used as a non-standardized AR data format

2010

2011

ARML 2.0 proposed to respond to new needs in AR

2012

ARML 2.0 Standards Working Group founded within the OGC, 6 founding members

30+ members join founding six

First (internal) Draft of ARML 2.0 spec, membership increases to 47

2013

Finalization and signed-off ARML 2.0 standard

MEMBERS

ERICSSON

ORACLE

EADS

HITACHI

Google

HYUNDAI

wikitude
AR – A Technology Mashup
Related AR Technologies and Standards

- Geospatial: GML, GeoJSON
- 3D: COLLADA, X3D, OpenGL
- Web Technologies: HTML 5, JavaScript
- And much more ...
One specific issue ...

3D Models in Augmented Reality
Model Complexity

180,000 faces

17,000 faces

Engineered Model Simplification for Simulation Based Structural Design, Mingdong Zhou and Michael Yu Wang, 2012
Format Diversity

• Many proprietary formats (game engines etc.)
  – obj
  – md2, md5
  – 3ds
  – ...

• A couple of standardized formats

[Images of Collada and X3D logos]
Diversity of Feature Set

• 3D is complex!

• Different ways to
  – define the model
  – define animations
  – define textures/shaders/materials
Solution: Interoperability between AR and 3D community!
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Chair of ARML 2.0 SWG

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