3D in Augmented Reality

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CTO, Wikitude

Wikitude

wikitude
Stunning overview
Free WiFi
National Museum
Pizza Corner
Bank Check In
@Andy

AR Standards

OGC ARML 2.0 SWG

OGC ARML 2.0 SWG - Scope

mobile visual AR

```xml
<?xml version="1.0"?>
<quiz>
 <question>
  Who was the forty-second
  president of the U.S.A.?
 </question>
 <answer>
  William Jefferson Clinton
 </answer>
 <!-- Note: We need to add
  more questions later.-->
</quiz>
```

XML

descriptive format

```javascript
var award_medals, contenders, gold, silver, the_field;
gold = (silver = (the_field = "unknown"));
award_medals = function award_medals(first, second) {
  var rest;
  rest = Array.prototype.slice.call(arguments, 2);
  gold = first;
  silver = second;
  return the_field = rest;
};
contenders = ["Michael Phelps", "Liu Xiang", "Yao Ming",
"Allyson Felix", "Shawn Johnson", "Roman Sebrle", "Guo
Jingjing", "Tyson Gay", "Asafa Powell", "Usain Bolt"];
award_medals.apply(this, contenders);
alert("Gold: " + gold);
alert("Silver: " + silver);
alert("The Field: " + the_field);
```

scripting components

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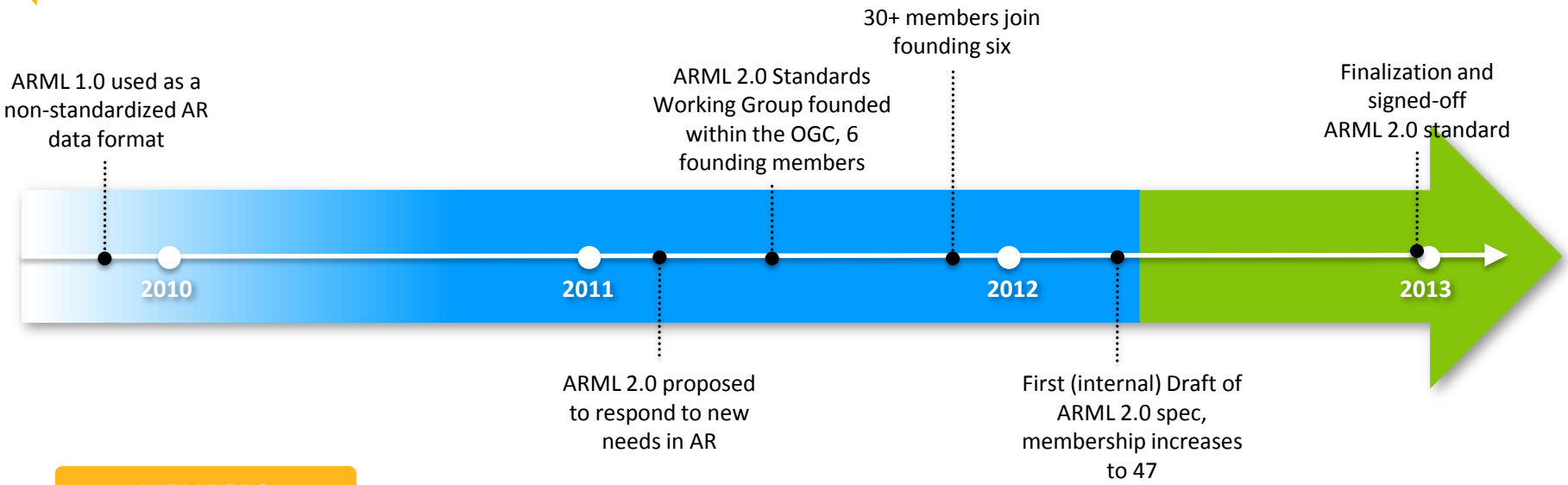
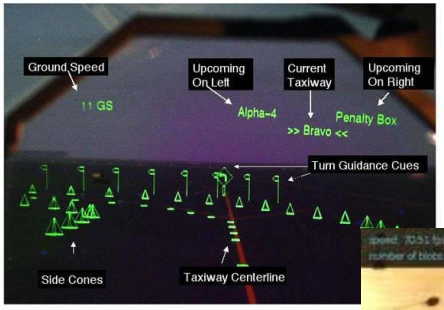
ARML 2.0 SWG

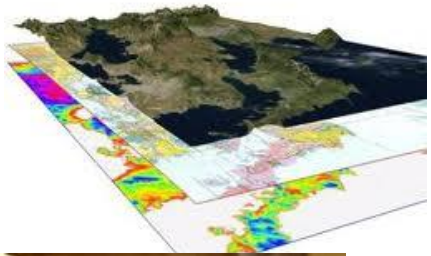


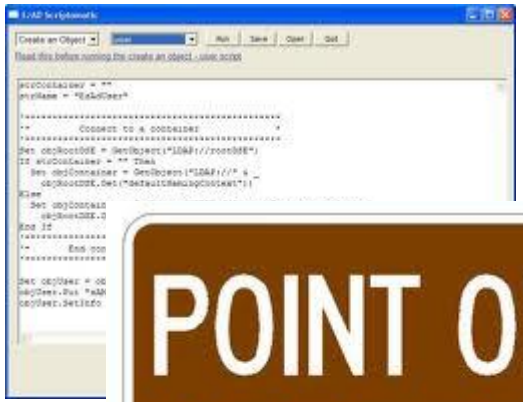
MEMBERS

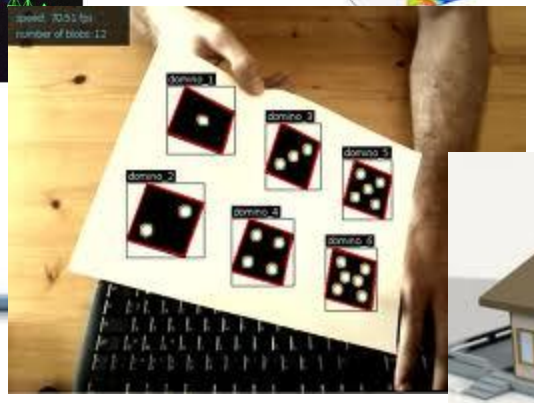
ERICSSON ORACLE EADS HITACHI Google HYUNDAI

AR – A Technology Mashup









Related AR Technologies and Standards

- Geospatial: GML CityGML KML GeoJSON
- 3D: COLLADA X3D OpenGL
- Web Technologies: JavaScript HTML
- And much more ...

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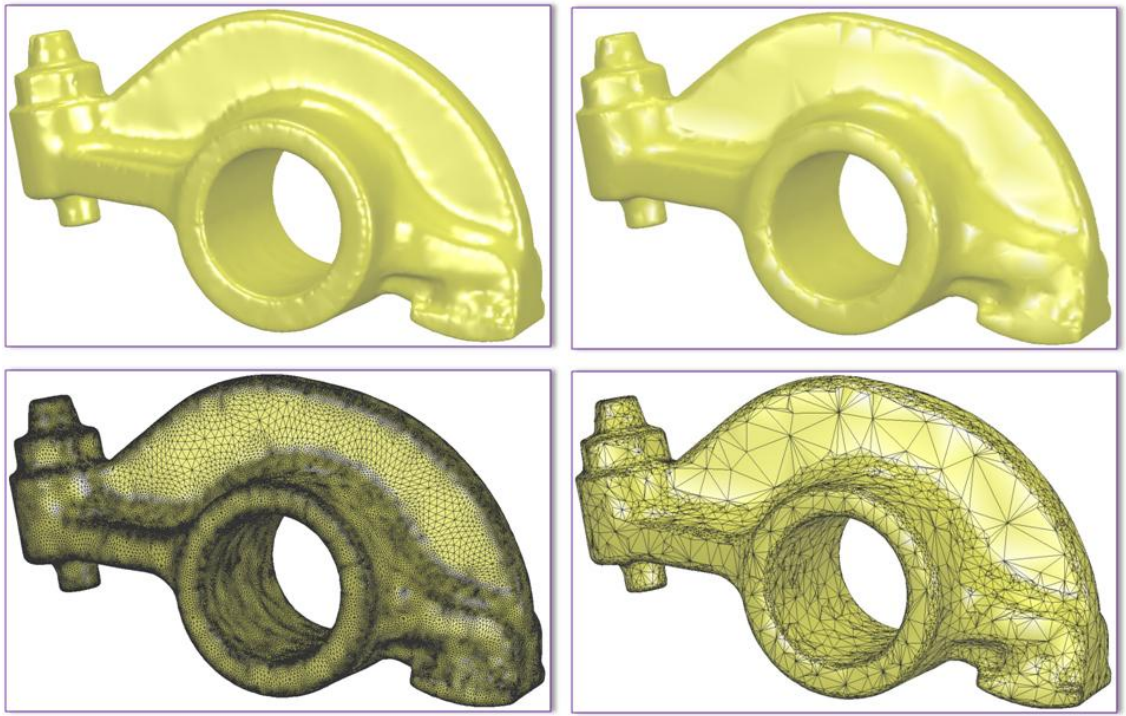
One specific issue ...

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

COLLADA

<X3D>

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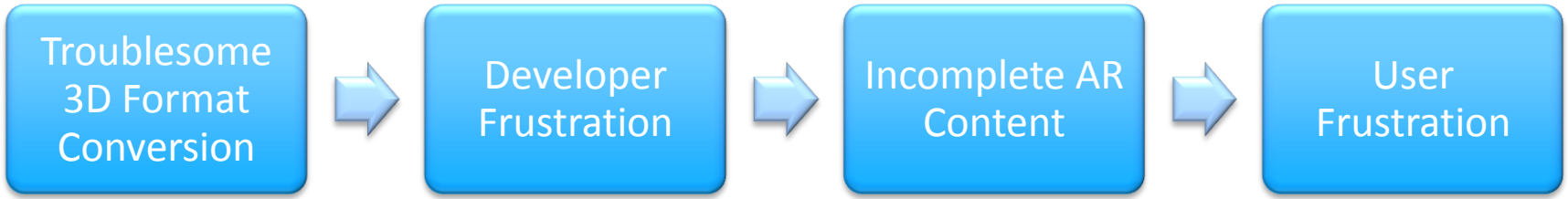
Diversity of Feature Set

- 3D is complex!

- Different ways to
  - define the model
  - define animations
  - define textures/shaders/materials

Result



Solution: Interoperability between AR and 3D community!

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Chair of ARML 2.0 SWG

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