AR standards

Open and Interoperable AR Content and Experiences

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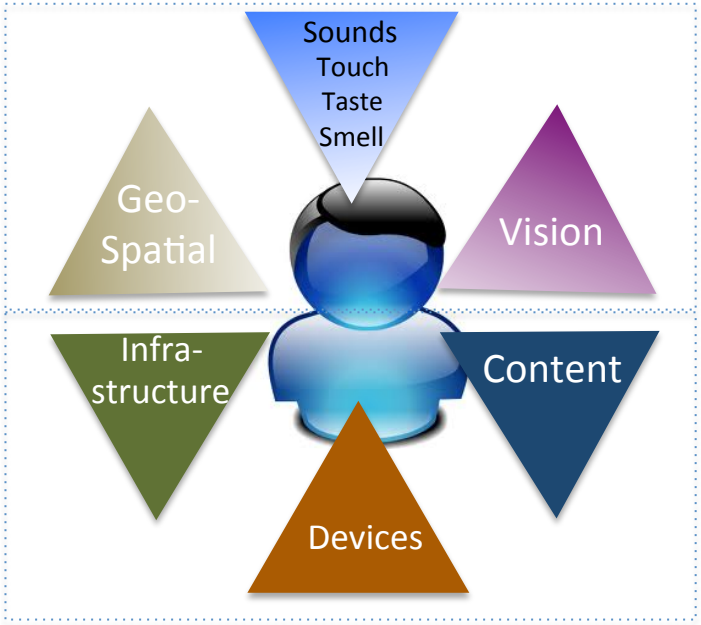
No Such Thing as "the AR Standard"

Acquire Context

Focus on
the User Experience

Recognize, Track



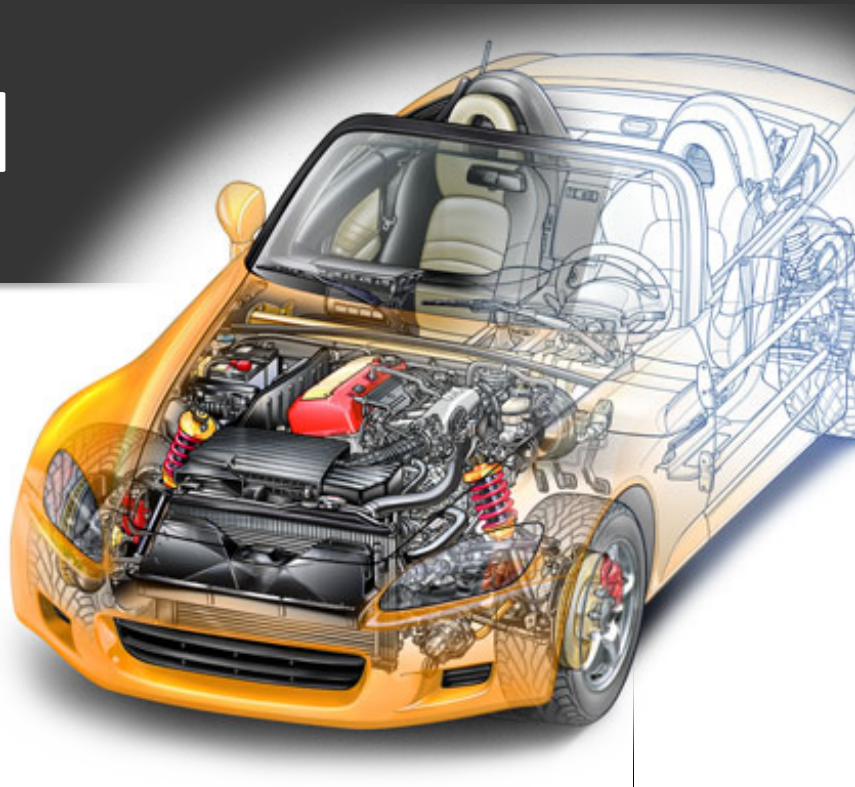
Present
Augmentations

Match with Triggers
and Deliver
Augmentations

Standards are means to

open and interoperable AR content and experiences

In An Ideal World



A driver chooses any model and uses an automobile to get from point A to point B

In AR, users can **choose** the SW/HW they prefer and experience the same (or similar)

1. Interactivity
2. Behaviors

an experience may have added features when used with recommended SW/HW

Key Benefits of Open Interoperable AR

- Users have choice of SW/HW for experiences
- Content publishers reach maximum audience (many platforms support experiences)
- Developers can innovate, choose tools from a modular "toolbox"

AR would have more in common with today's Construction and Automotive Industries

Open Augmented Reality Systems will have…

- Agreed upon frameworks defining
  - APIs between Components, Systems and Sub-systems
- Differentiation
  - On a per-use case basis
  - For benefit of users (not "trapping" them or content)
- Maximum Reach
  - Publishers can release experiences with high potential of mass market reach

Like automotive, AR will have lucrative and diverse business models

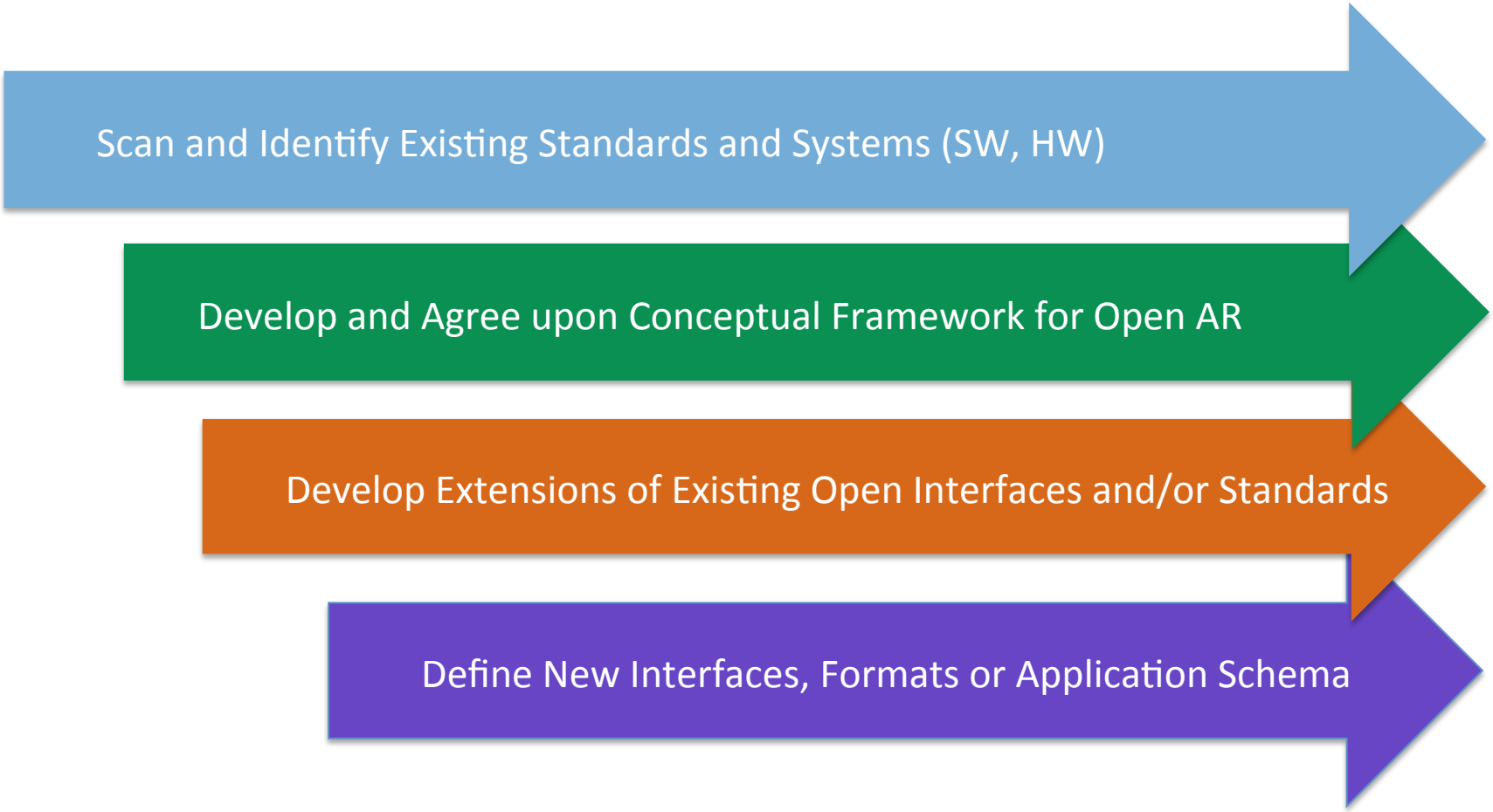
Why Not Today?

- AR isn't mature, innovation (and chaos) is high
  - Different work methods, use cases
  - Rapidly changing file formats and APIs
- There isn't an AR Reference Model
  - an abstract framework or domain-specific ontology consisting of an interlinked set of clearly defined **concepts** produced by an expert or body of experts in order to encourage **clear communication**

Approaches

- Develop tools with which to increase and clarify communication between
  - Standards Development Organizations
  - Businesses: content publishers, developers
  - End users
- Call for compatible and open (de-coupled) publishing and AR "reading" systems

How Will Open AR Develop?



An Open Community

To accelerate the process by which barriers to open and interoperable AR content and experiences are reduced through industry-wide collaboration

Who?

Individual Participants Representing

- Industry (companies of all sizes)
- Government
- Academia

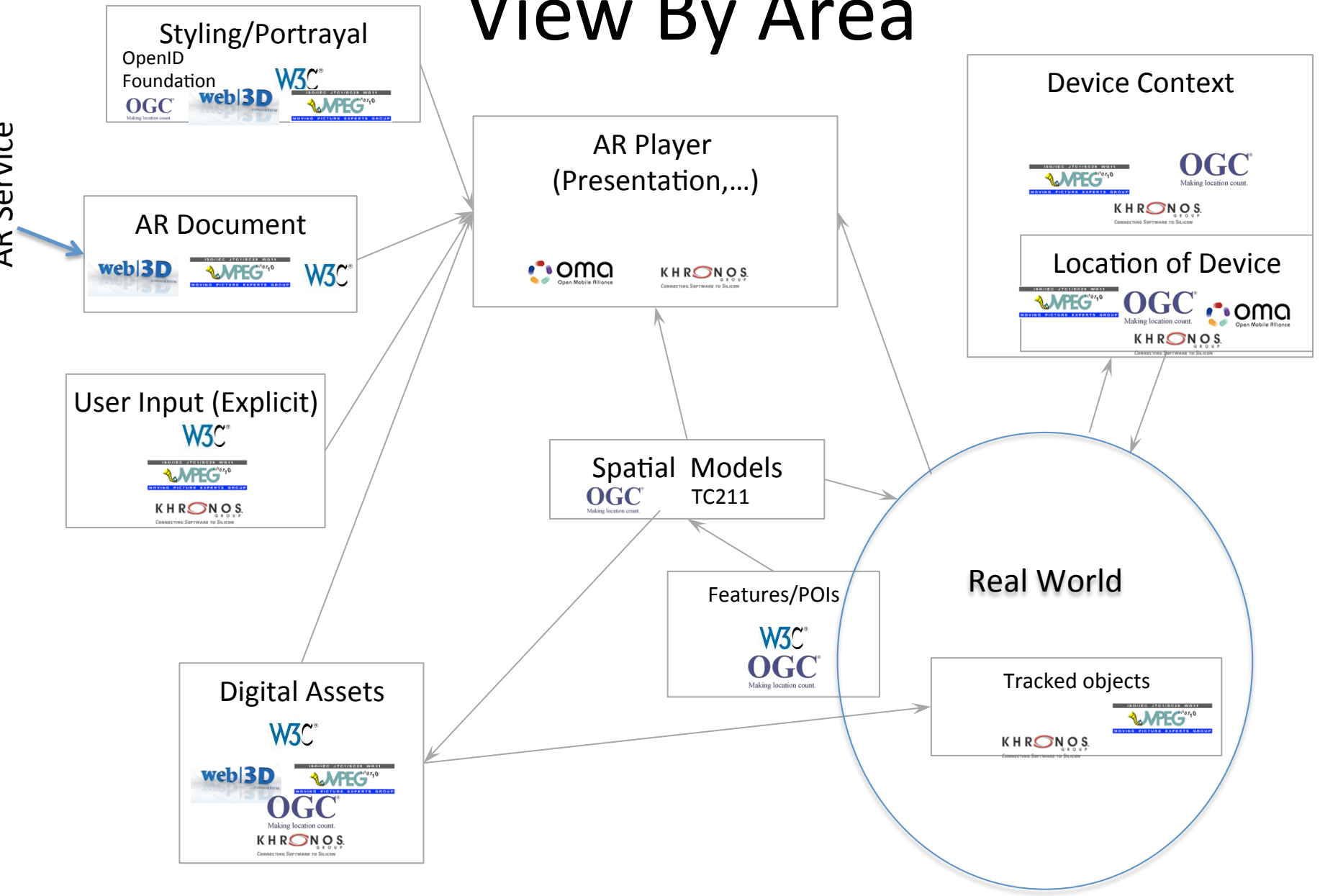
Global Reach

- Western Europe
- Eastern Europe
- North America
- Asia
- Australia
- Middle East

Standards Organizations Contributing to Community Resources

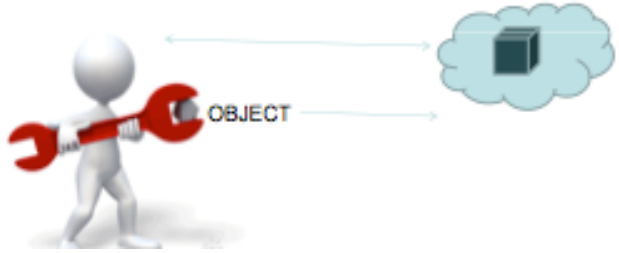

Mobile software interfaces
oma
Open Mobile Alliance
Vertical Markets
First Responders
Automotive
BuildingSMART
AEC
International Organization for Standardization
Graphics
Representation
Compression
ARAF
W3C®
Browser Standards
POI
KHRONOS GROUP
Acceleration APIs
Sensor APIs
3D Data Formats
web 3D CONSORTIUM
X3D
X3Dom
SID
SOCIETY FOR INFORMATION DISPLAY
Display Technologies
OGC™
Open Geospatial Consortium, Inc.
Location/Geospatial
Sensor Web
mipi®
mobile industry processor interface
Mobile Hardware Interfaces
NISO
How the information world CONNECTS
Content Publishers
Libraries
National Standards Organizations

View By Area


AR Service
Styling/Portrayal
OpenID Foundation
AR Player (Presentation,…)
Device Context
AR Document
Location of Device
User Input (Explicit)
Spatial Models
TC211
Real World
Features/POIs
Digital Assets
Tracked objects

Scenarios in User Language

- Guide
  - Leads user through a process in real world
- Create
  - User contributes digital object on real world
- Play
  - bi-directional interaction between users and the real world

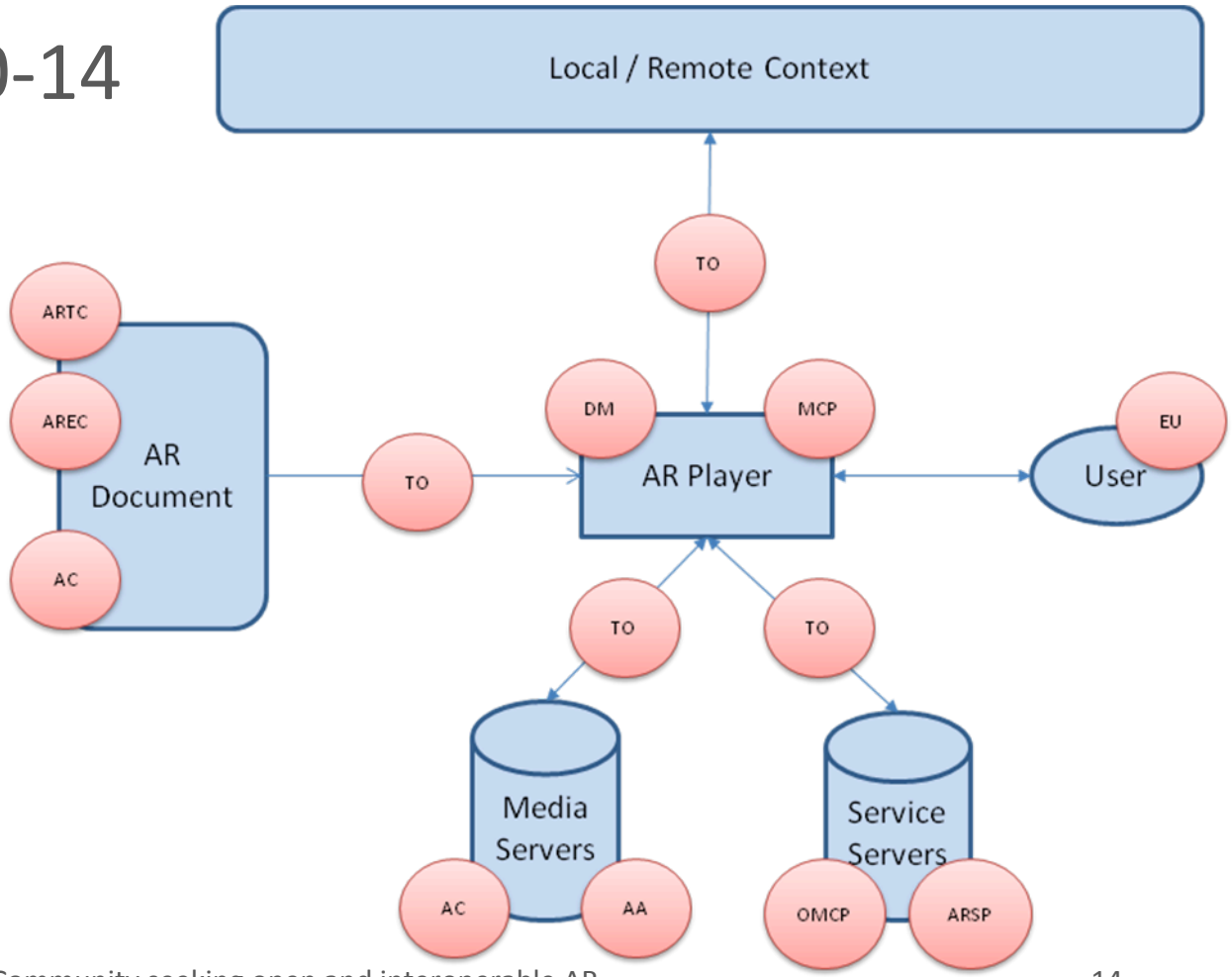


3D Transmission Format

- Define
  - a Common Simple Profile for COLLADA/MPEG4/X3D to enable widespread, robust import/export from authoring tools
  - a royalty-free compressed encoding of the above format for efficient network transmission of 3D assets
- Khronos Group, MPEG, Web3D Consortium and OGC
- Draft MOU

AR Reference Model

- ISO/IEC 23000-14
- Actors, roles
- Use cases
- Vocabulary



Key TakeAways

Open and Interoperable AR is Within Reach

- SDO use bi-lateral MOUs
- Many elements in place
- Active work underway

Much remains to be done

- Attract content publishers and developers
- Explore new use cases
- Implementations
- Conformance
- Functional requirements

For more information

- AR Standards Community Portal
  http://www.arstandards.org

- Seventh AR Standards Community meeting
  - Atlanta, Georgia
  - November 8-9 2012

http://www.perey.com/ARStandards/seventh-ar-standards-community-meeting/

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