



Components of AR as a mass medium

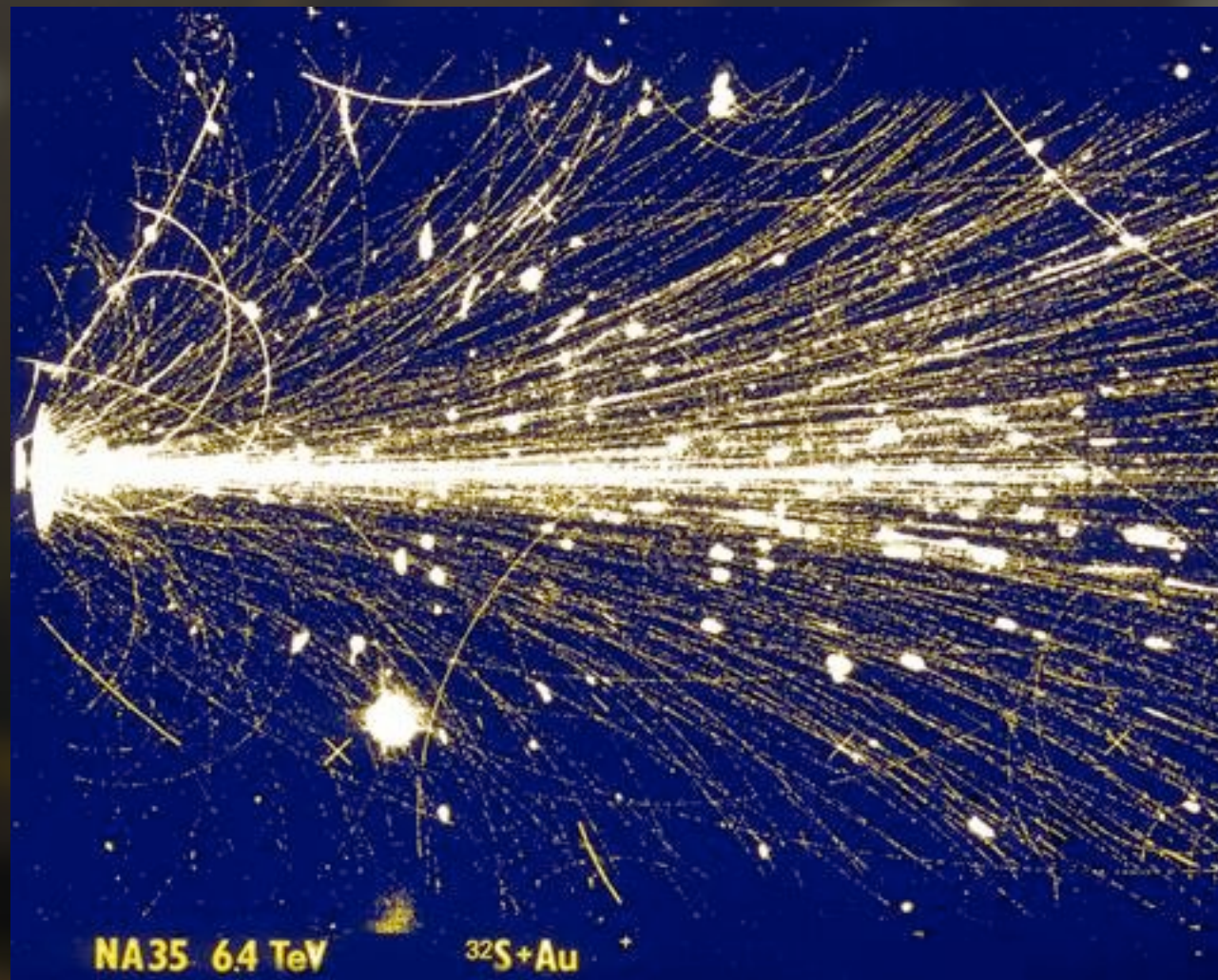
Layar's view on standardization



My first www experience



European Organization for Nuclear Research



Summer 1992

CERN document library



Image by CERN PhotoLab © 2010, Layar B.V.

Some time ago ...

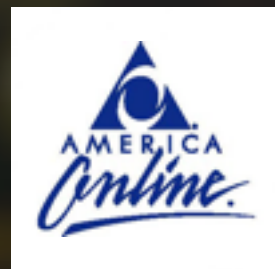


New medium gains traction

Curated eco-system



World Wide Web



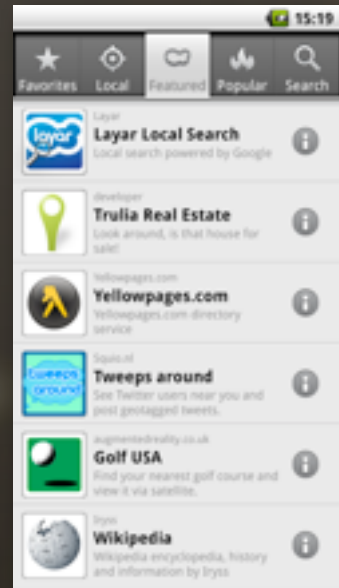
Massive distribution

Media specific content



1994 - 1998

An emerging mass medium



New medium gains traction

Curated eco-system

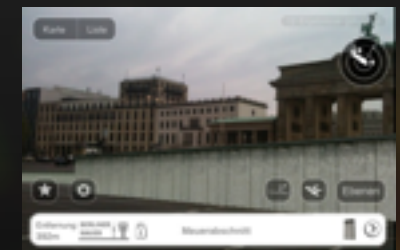


Augmented Reality

SAMSUNG

Massive distribution

Media specific content



2009 - 2010



The Layar AR platform

2.000.000 Users

3500+ Developers

900+ Layers Published

1.600.000 augmented objects served per day



Missing elements

- No standards
- Content made for each browser, no interoperability
- Global search for content

'Where is ...'



Request format: Knowing the context

- Layar uses simple HTTP GET for "get_POIs"
- Custom list of parameters to tailor response
 - Position: latitude, longitude, altitude, accuracy
 - Filter settings for a layer

```
/?lat=45.24362&lon=2.3234&alt=35  
&userId=24da446e&lang=nl&countryCode=NL&CUSTOM  
_SLIDER=24&RADIOLIST=2&range=1500&accuracy=8
```



List of POIs

- The AR view is a list of POIs
- No ordered structure like a web page (Layar uses JSON array)
- For each POI we need:
 - Position (lat, lon, alt or relativeAlt)
 - Display information (text)
 - Resource locators: URIs for images, objects
 - Interactions (we call them actions)
- On a layer level (all POIs) we need:
 - Style elements for default styling

Live & Dynamic information



Refreshing AR view

- Data in AR view might be changing rapidly.
- Like on www, using HTTP with variable refresh rates is sufficient in most cases.
- Obviously, like on MMOG, other protocols might be more appropriate for certain types of experiences.
- Don't forget: It's a mass medium, what will publishers and content providers adopt most easily? SMPP? Really?

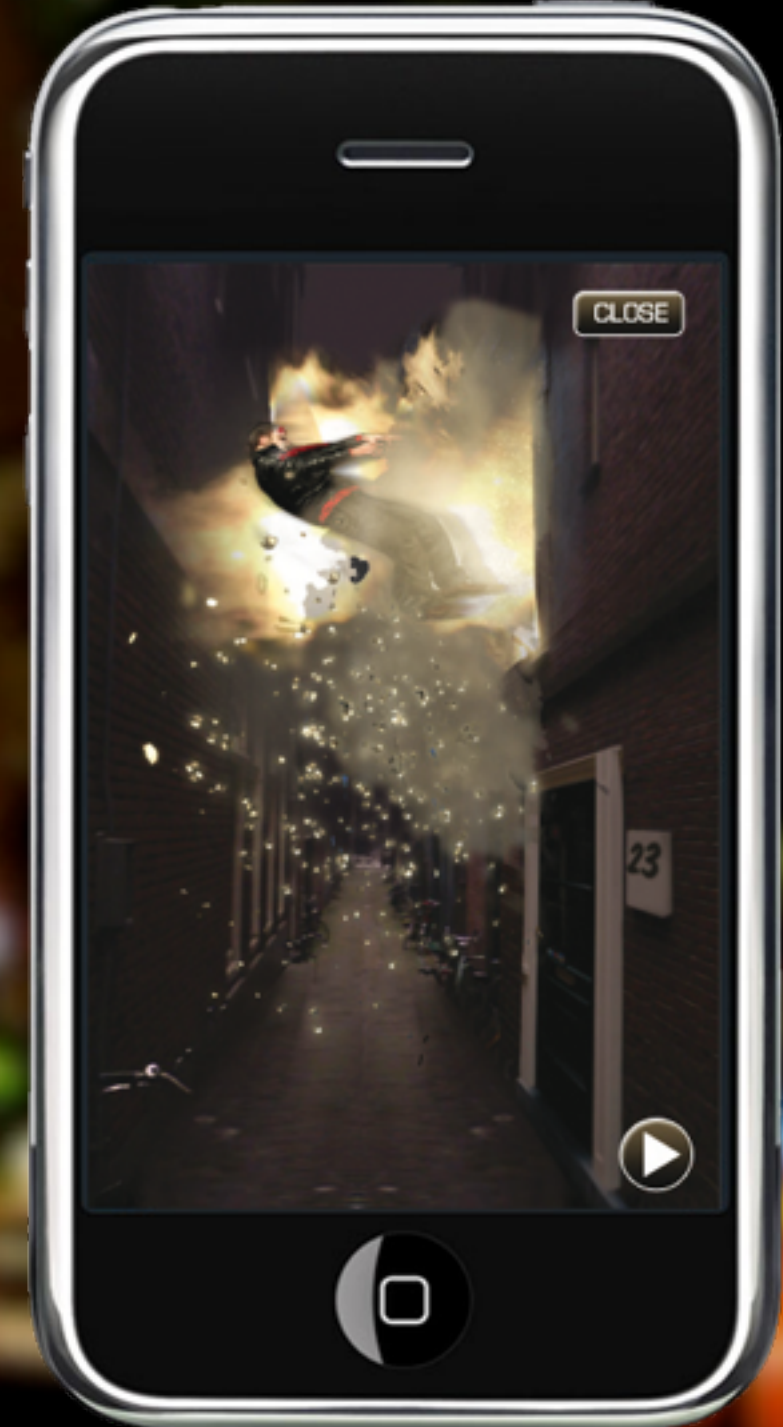
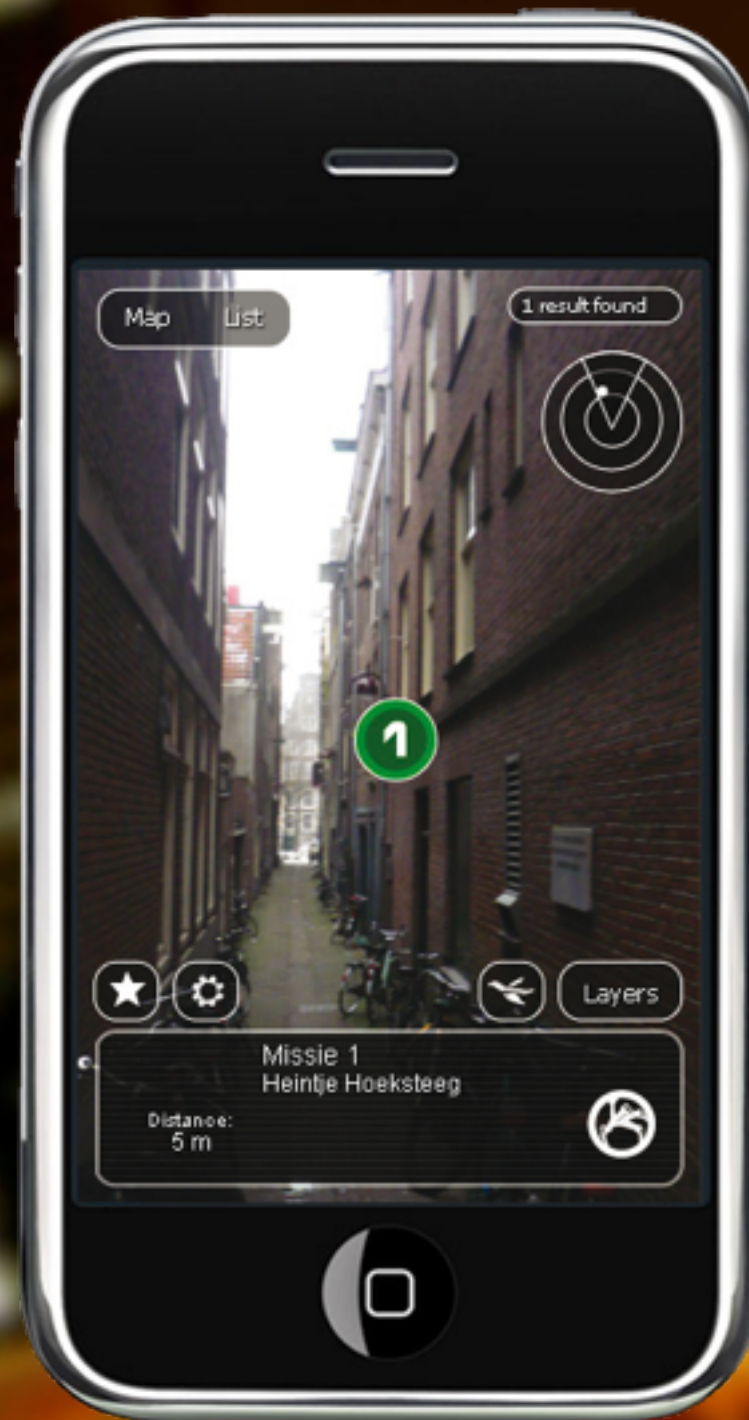
Insights



3D content

- Each POI has associated resources (representation of the POI)
- 2D or 3D content placed in real world
- The object itself:
 - 3D format taking into account low bandwidth (.l3d format)
 - Authoring tools supporting the format
 - Representation depending on distance
- Placement and pose of the object:
 - Position, rotation, size
 - Pose with respect to real-world features
- Animation and scripting (think of MMOG)

Stories & Games



Interaction with POIs

- True mass media need interaction with users
 - Representation of UI to the user
 - Layar will pull web browser model through to AR view
 - HTML, javascript, css for UI
 - Allows for information and interaction (text + buttons)
 - But don't forget link between AR view and the 'flat web-like' UI
 - Link from object (POI metadata) to visual UI
 - Link back from visual UI to objects
- `layar://mylayer/?action=refresh&someparam=3`



Layar Stream: search and discovery in AR



Finding the content

- AR content is not just another type of web content
 - It's placed in real space!
 - It's only relevant at its specific location
 - (and it might be moving all over the place)
 - It's more difficult to link to other content
- Crawling AR content is a challenge
 - Role of catalogs
 - Role of content providers

Summary

- Components to consider in standardization
 - Request including context information
 - List of POIs
 - Object format and representation in space
 - Interaction with objects
 - Indexing and search
- Layar will adopt standards where possible and will lead new standards where needed



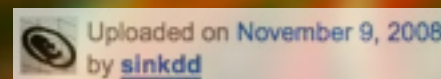


Thank You

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Background image:



<http://www.flickr.com/photos/sinkdd/3016118556/sizes/o/>

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