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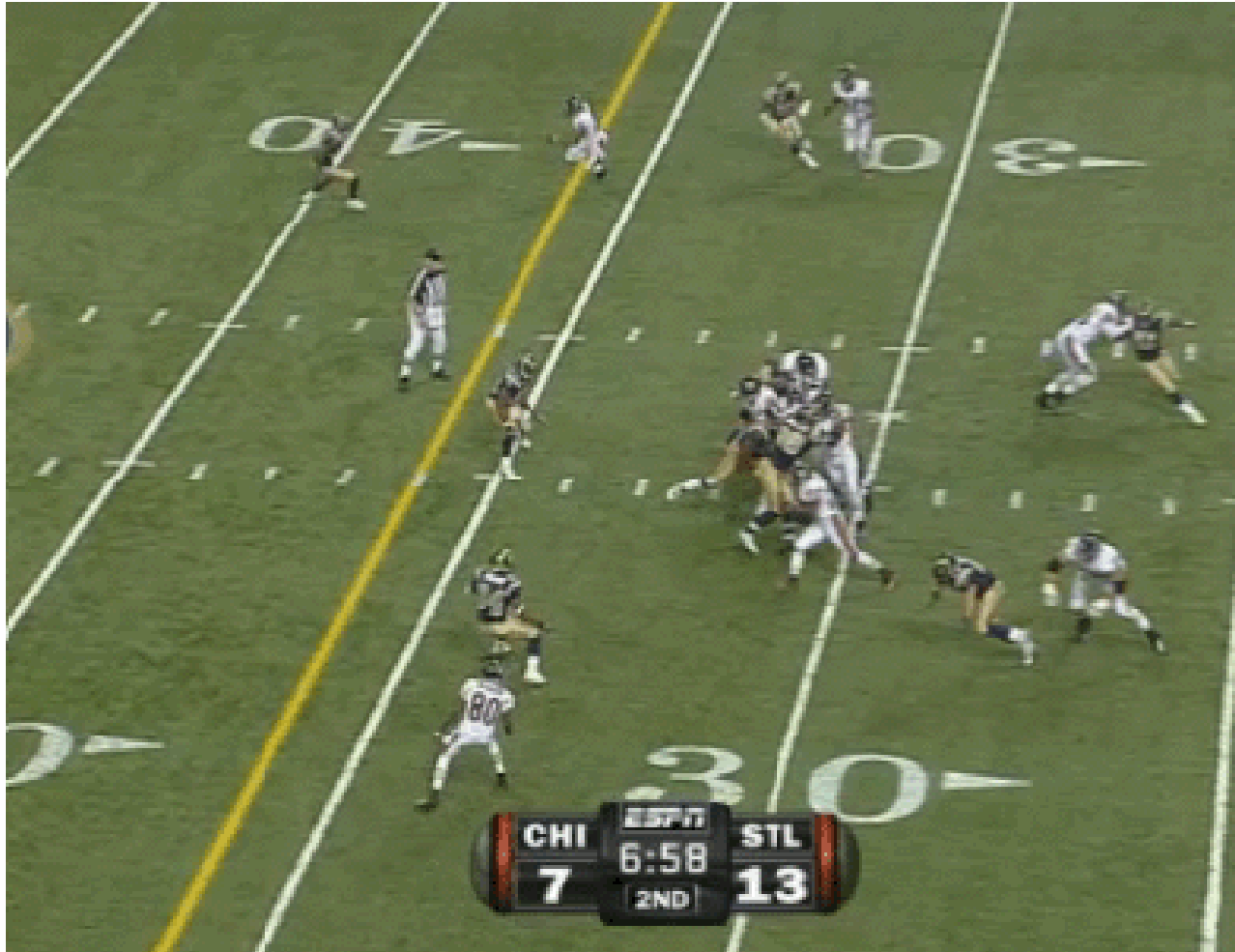
# Making the Depth Grids Dance: Using Augmented Reality (AR) in FEMA RiskMAP Outreach

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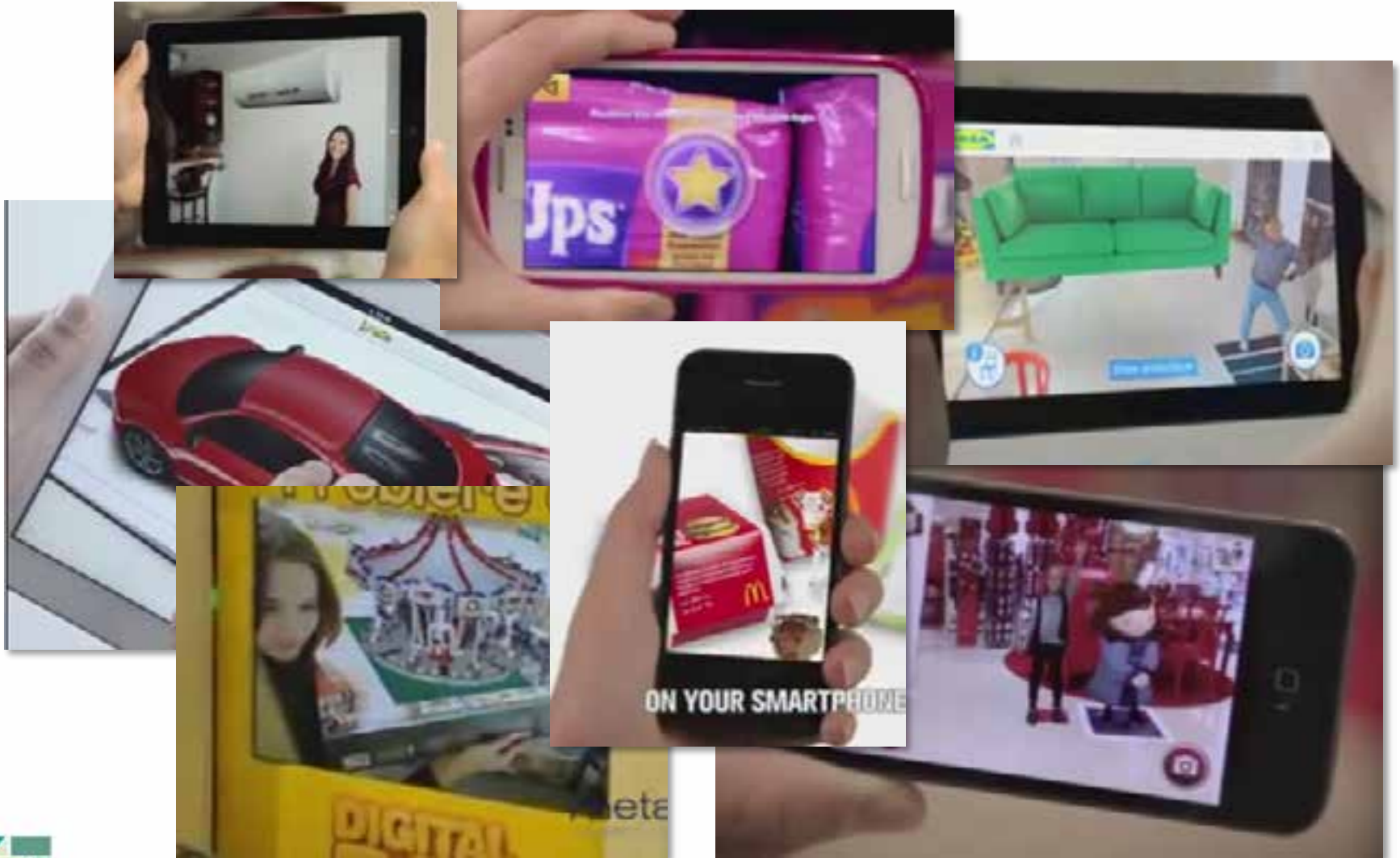
# AR is...



# AR is becoming...



# AR is Mostly Marketing



# Tool of Mad Men

- “AR is the modern equivalent of pulling a rabbit out of the hat in the sense that one second you’re looking at reality through the lens of your phone, and the next an object appears out of thin air. This ability to essentially post advertisements or engaging media in virtual space provides marketers with an unprecedented opportunity to engage their audience with genuine excitement and value.”
- - Pierre Addoum in *From Gimmick to Given: Augmented Reality and the Future of Marketing*

# AR Can Link RiskMAP Products





# AR is Like QR Code Recognition



2706 W Daniel St, Champaign, IL 61821

 For Sale: \$101,900  
Price Cut (Mar 29): -\$3,000  
Zestimate®: \$97,733  
Est. Mortgage: \$368/mo

[See current rates on Zillow](#)

Bedrooms: 3 beds  
Bathrooms: 2 baths  
Single Family: 1,200 sq ft  
Lot: Unknown  
Year Built: 1961  
Last Sold: Dec 2004 for \$108,000  
Heating Type: Unknown  
Listing site: Keller Williams Realty -  
The Real E...  
[View virtual tour](#)

Photos

Map

Bird's Eye

Street View



2013 Champaign C [View larger](#)



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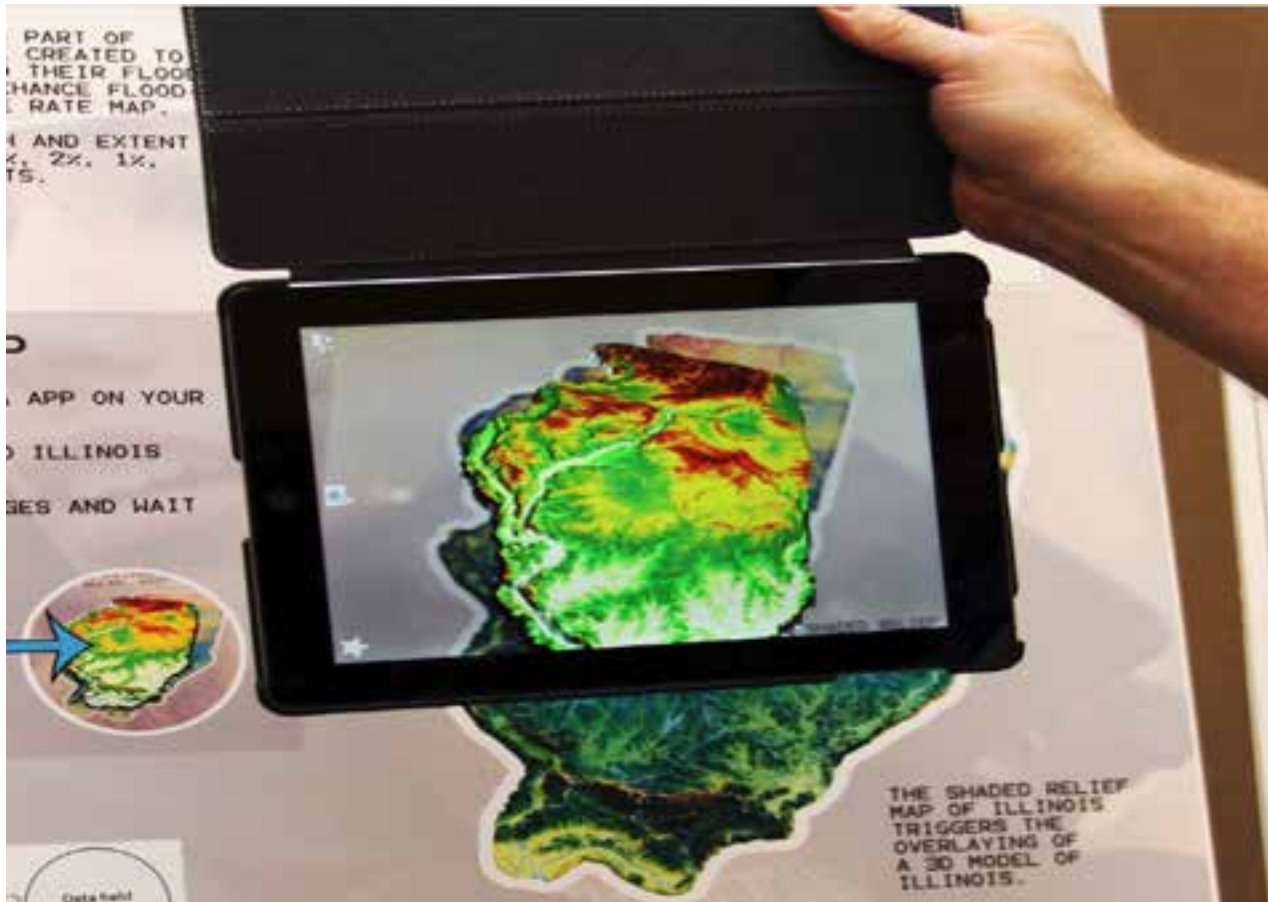
# Image Recognition replaces QR Code



- YouTube [demo](#)



# Experiment #1



AR Enable a Conference Poster

# Experiment #1 Demonstrated

## Three Trigger Images -> Three Overlay Types

- Multi-Frequency Depth Grid -> Animated Cycling between Frequencies
- Shade Relief Map of Illinois -> 3D Model of Illinois
- Barricade -> Video and Audio Educational Segment

# Experiment #1 Lessons Learned

## Good Trigger Images

- Tonal variation and contrast
- Unique shapes and forms
- Lots of detail across the entire image

## Bad Trigger Images

- Sparse images, including basic logos
- Very dark images, blurs, and gradients
- Repeated or identical features (patterns, text)

# Lessons Learned (continued)

- Overlay Resolution limits
- App installation multi-step (=difficult)
- Most devices compatible
- New to everyone
- More cool than informative

# Multi-step Set Up

- 1) Install Aurasma App (IOS & Android)
- 2) Search for and Subscribe to ISWS Channel
- 3) Point Device



[Setup \(Youtube\)](#)



# Experiment #2



AR Enable a FIRM



# Experiment #2 Demonstrated

- Floodway Trigger Areas within DFIRM -> Animated Cycling between Frequencies
- Buttons
  - Pause/Play, Fullscreen, Website, WebMap Service

[Demo \(Youtube\)](#)

# Experiment #2 Lessons Learned

- Complex triggers possible
- Protocol needed for ArcGIS creation of depth grid animation overlays
- User needs help to find trigger areas
- Buttons worked, but hard to tap
- Map Service slower to load
- More cool than informative

# Experiment #3



Public Meeting FIRM

# Experiment #3 Demonstrated

- Every DFIRM panel AR Enabled (17 panels)
- One overlay per panel
- Tapping instead of buttons
  - Pause/Play/Full Screen



# Experiment #3 Lessons Learned

- Legend and titling often out of frame
- ArcGIS Map Book useful creation of depth grid animation overlays
- Whole floodway trigger areas easier to find
- Narrow audience
- Not always close enough
- More cool than informative

# Experiment #4



Delegated Operation



# Experiment #4 Demonstrated

- Every PMR panel AR Enabled (9 panels)
- Multiple overlays per panel
- Transparent Changes Since Last FIRM
- No animation
- No buttons
- No legend
- Demonstrated by co-workers

# Experiment #4 Lessons Learned

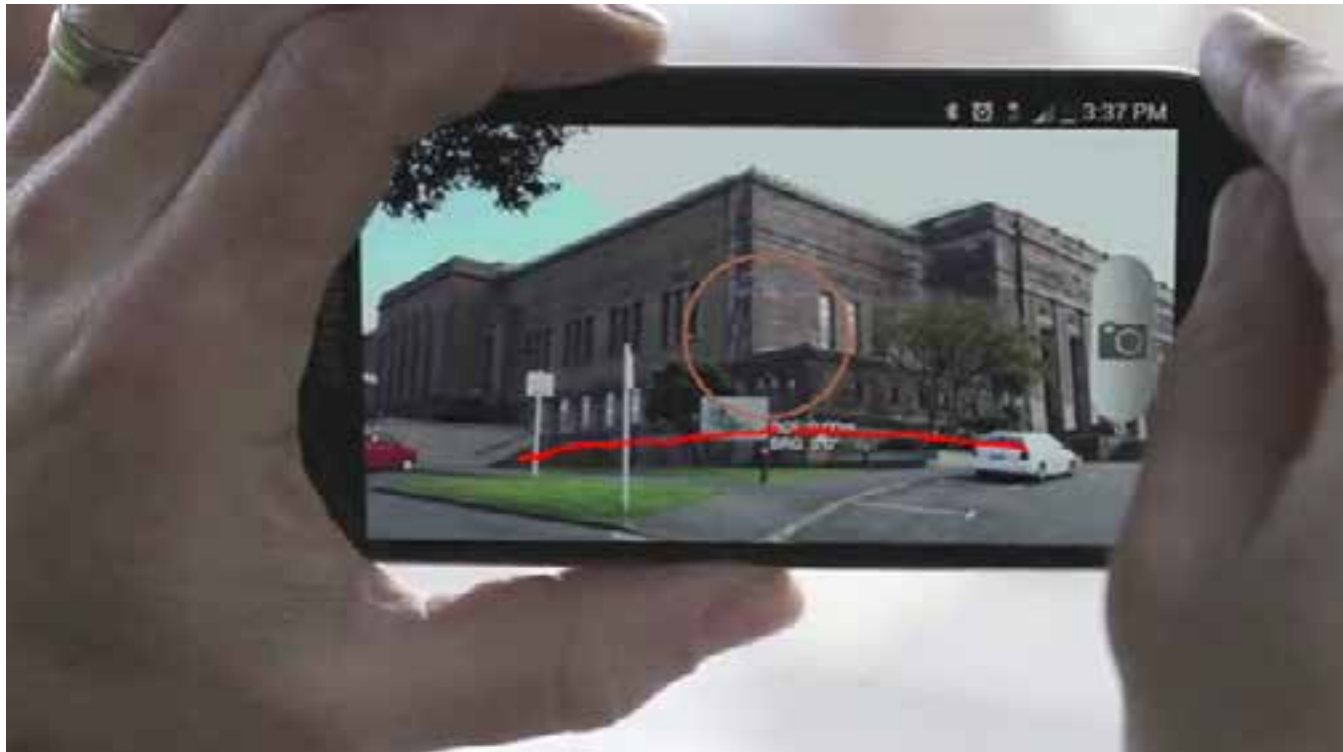
- Image response ranged from very good to non responsive (very disappointing)
- Transparency bridges the user experience
- CSLF better connection to subject matter
- Narrow audience
- It matters how you hold the device
- More cool than informative

# Path Forward

- Build-in App
- Follow multiple AR providers
- More engaging interactive content
- Ride wave of AR growth
- Add BFE mark to buildings
- Link to forecasting



- Add BFE mark to buildings



# Thank You

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