



# CyRIS Kickstart

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- I. Content Manager
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# Content Manager: Overview

- We want to build a new content manager for the screen
- Responsive (<1 second lag)
- Capable of spawning multiple children
- Must prevent users from accessing system functions

# Content Manager: Technology



- Open source, cross-platform framework
- Rapid and easy development of visually rich 2D or 3D applications
- Focus on multitouch
- Supports native Windows 7 Touch API and mouse inputs
- OpenGL graphics

# Content Manager: Bottlenecks

- MT4J uses Windows 7 natively, but can be adapted to other touch methods
- Can use a lot of memory depending on the extensiveness of the program
- easier to work with when developing programs on a 32 bit machine
- antiquated website / code not updated since 2012

# Content Manager: Resources

- MT4J Google Code Website: <https://code.google.com/p/mt4j/>
  - Issues
  - Author email links
- MT4J Official Website: [http://mt4j.org/mediawiki/index.php/Main\\_Page](http://mt4j.org/mediawiki/index.php/Main_Page)
  - Documentation
  - FAQ
  - Blog

# Feeds: Overview

- We want to build an app that aggregates RSS, Facebook, and Twitter statuses into one feed
- Opens links in new window
- Displays embedded images
- Scrolls at bottom of screen
- Scrolling pauses upon touch
- User can manually scroll through feed
- Admin sets the feed content

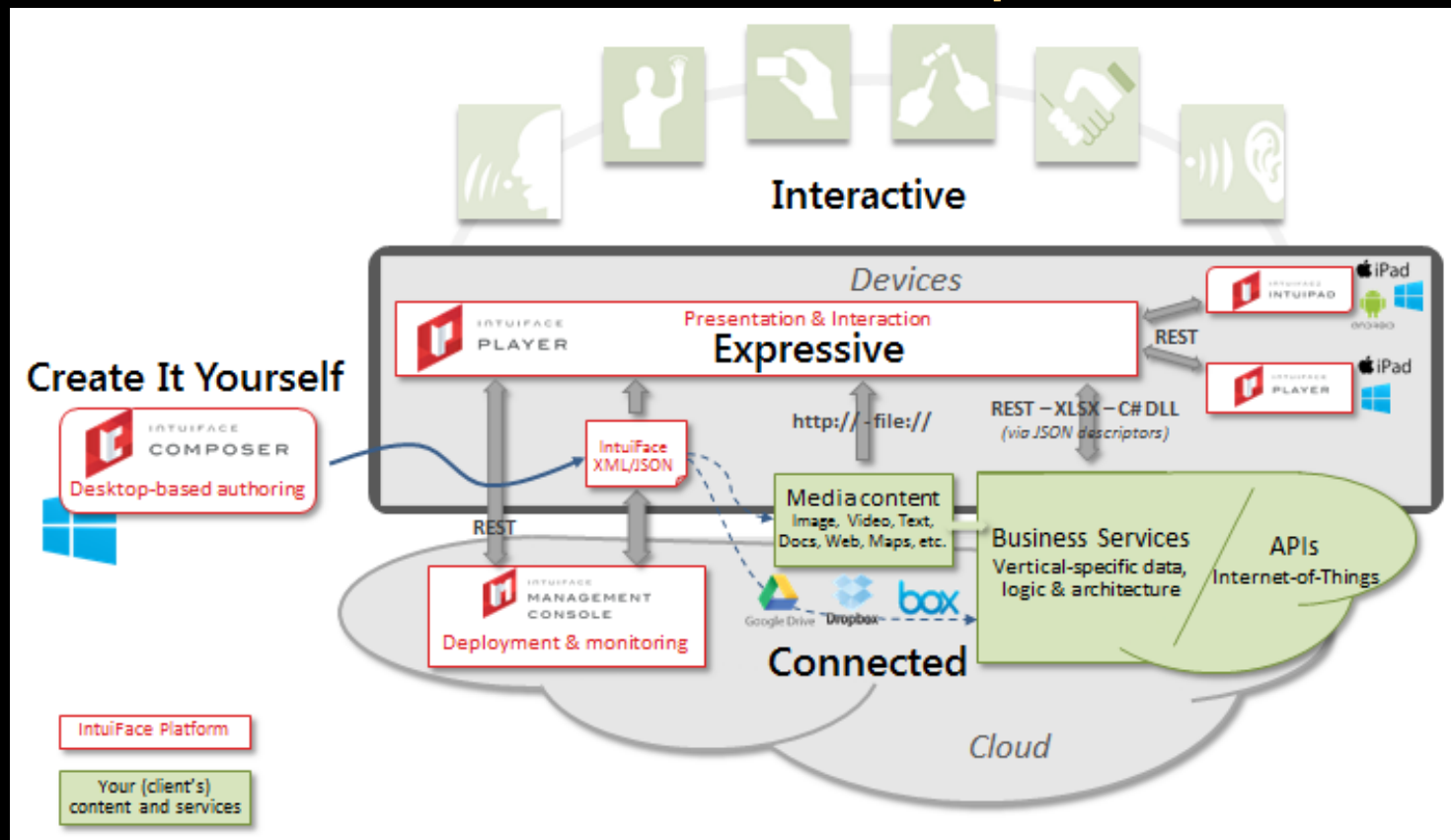
# Feeds: Technology

- Facebook API
- Twitter API
- RSS
- Interface Asset (Intuiface)
  - Rest Web Services
  - Excel
  - C# DLLs (dynamic linked library)



# Feeds: Technology (Cont.)

The following architecture diagram shows how IAs extend the IntuiFace platform



# Feeds: Bottlenecks

- Determining how long before an opened window or the feed itself is considered inactive (and then closes)
  - Abstruse, difficult to understand content takes longer to read
  - Articles with more content take longer to read
  - Viewer may not be fluent in English and it takes longer to understand the content
  - The distracted, multi-tasking viewer will take longer to view and understand the content (eg: viewer looking at cell phone and CyRIS at same time)

# Feeds: Resources

- Facebook API (<https://developers.facebook.com/docs/reference/api/status/>)
- Twitter API (<https://dev.twitter.com/docs/api/1.1>)
- Interface Assets  
(<http://support.intuilab.com/kb/interface-assets-new-in-40/interface-asset-general-concepts>)

# Staff Directory: Overview

- We basically want a copy of the staff directory online
- Responsive (<1 second lag)
- Overall list of all staff members
- More details available on click of name
- Must prevent users from accessing system functions

# Staff Directory: Technology

- Link to current website would just require the disabling of unwanted features
- We could also scrape the website for information and photos and create our own version
  - Options are many including Google Chrome Store's Scraper

# Staff Directory: Bottlenecks

- Different websites for different majors and buildings
- Lack of knowledge with regards to scraping websites

# Staff Directory: Resources

- Internet feature disabling whether within the browser or from outside programs
- Website scraper
- More research into both options needed

# Campus Map: Overview

- Display of Campus map with panning and zooming features
- Sub-Maps of Buildings to show layout of the rooms and numbers
- Resources in each building (computers, printing, mail dropbox, etc.)
- Grid System to place map items, integrate with CyRide
- Read-Only to prevent made-up locations, etc.



# Campus Map: Technology

- OpenStreetMap API will be used for importing the mapping program
- CyRide data points can be displayed on the map after collection from NextBus public API



# Campus Map: Bottlenecks

- Adjusting the screen size based on amount of users. Normal use would use Full-Screen
- Integrating CyRide Routes into the Map might be a challenge
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# Campus Map: Resources

- OpenStreetMap API [wiki.openstreetmap.org/wiki/API](http://wiki.openstreetmap.org/wiki/API)
- Next Bus public API <http://www.nextbus.com/xmlFeedDocs/NextBusXMLFeed.pdf>

# Camera App: Overview

- Allowing user interaction with CyRIS through cameras would add another layer of depth to the system
- Various possible ideas exist- hole in the wall (lab feed), facial recognition, mirror
- This may be a risky app due to video display lag and camera resolution

# Camera App: Technology

- Camera
  - Kinect: 640×480 pixels @ 30 Hz (RGB camera), 640×480 pixels @ 30 Hz (IR camera)
  - Webcam (Logitech, HP, Microsoft): 1920×1080 pixels @ 1080p (50/60 Hz)
  - Flea3 (Point Grey) 4096x2160 @ 21 FPS
- Camera installation: mounting, connecting to computer controlling screen

# Camera App: Bottlenecks

- Laggy video rendering across multiple touch screens
- Maximum resolution of the screen is 7680×3240- HD webcam video would be stretched to fill this width and may look bad

# Camera App: Resources

- ISU CSG
- Various Computer Vision Libraries (OpenCV, BoofCV, imageJ, JavaCV)