

PACS on Mobile Devices

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MOBILE TECHNOLOGY IN MEDICINE

- **Technology Driver in Hardware and Software is Mobile Technology**
 - Leading vendors introduce their offerings in Mobile space
 - Service providers in-turn upgrade their networks to connect the plethora of powerful devices using Wireless Technology
 - This allows rich applications that enhance user experience



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- Medical Industry would be served well by riding this wave
- Mobile devices are limited by power (heat) dissipation; the users hand is the heat-sink.



PACS on Mobile Devices

Technologies are mature

Web technologies have recently matured to a stage where a PACS on a mobile device is a reality.

The Future is HERE.



ENABLERS FOR WEB TECHNOLOGY

HTML5, CSS3, JavaScript



Demarcates the page



Defines how the elements are displayed



The engine that makes the page interactive



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 - Server can transmit images in smaller groups (or by sending every n th pixel intensity, thus optimizing band-width)
 - Mobile device will handle less data at a time
 - Allows viewing of DICOM's with minimum latency
 - Additional pixels are requested as the user scrolls through frames or zooms in



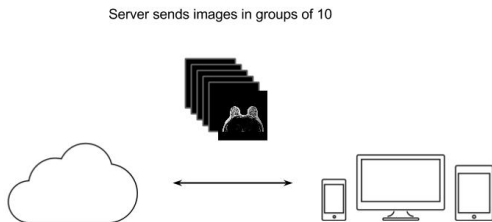
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 - Additional pixels are requested as the user scrolls through frames or zooms in
- Viewer can see any studies on any mobile device without any explicit software download



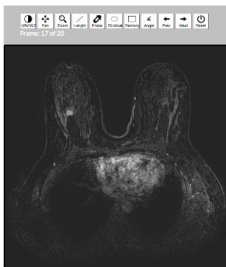
DICOM TRANSMISSION

DICOM's transmitted in groups of 10 to optimize bandwidth

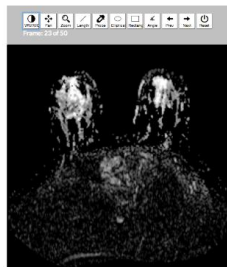


NO LIMIT TO WINDOWS

Web technology allows any number of windows to be viewed simultaneously for the same study



CAD 103 Sub Phase 4



dADC



CSS Based Views

DICOMs are displayed using HTML5's `<canvas>` tag.
These can be moved around using CSS.



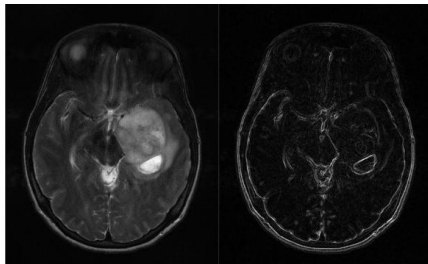
USER DEFINED HANGING PROTOCOLS

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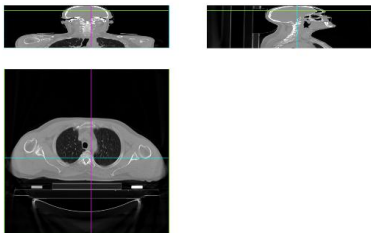
IMAGE SEGMENTATION

Using user-defined kernels, Javascript can be used to manipulate intensities on the HTML5 `<canvas>` elements.



Multiplanar Reconstruction

Coronal and Sagittal Planes can be reconstructed from Axial Planes by JavaScript Kernels



Conclusions

PACS on Mobile Devices

- Capabilities of mobile viewers rival those found on traditional PACS.
- Being a web-based application, additional capabilities such as automatic notification emails can be integrated into the workflow with relative little ease.



Thank You

Hello

