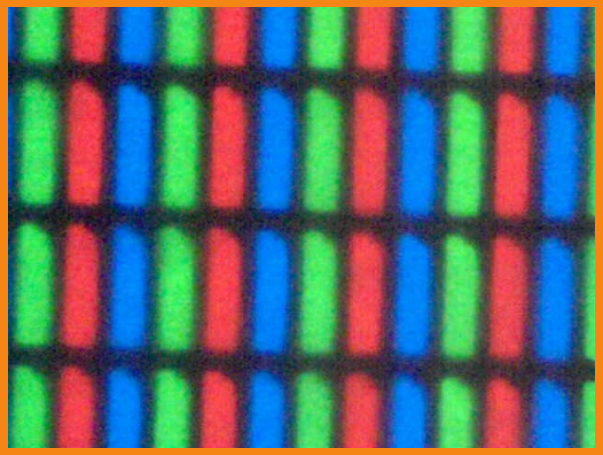
MOBILE FOR MEDICAL

DISPLAY CALIBRATION STATUS



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INTRODUCTION

- **Practitioners use mobile devices (tablets, phones) for a wide range of functions including**
  - Access to patient records
  - Ordering procedures
  - Viewing medical images from numerous imaging modalities for a variety of purposes
  - Making graphical record with tablet and phone camera features
- **Mobile devices are ubiquitous and their use will continue to grow due to**
  - Cost
  - Portability
  - Convenience
  - UI
  - Use paradigm carry-over from other applications
- **Better to be ready to embrace this technology**

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STATUS

- **Two WG sessions were held since the May 2013 FDA/ICC Colour Summit – slides from both sessions available at *color.org***
  1. *Display calibration challenges* – Vancouver November 2013
     - Problems statement from perspective of display engineers, not users or practitioners
     - Discussions of architectures with comparison to work-station and server based solutions
     - Suggestions for next steps including solicitation of needs from user community
     - Little response
  2. *MIWG Web Meeting* – April, 2014
     - Presented X-Rite *ColorTrue* solution and offered platform for solution prototyping and evaluation
     - Solicited additional solutions from other suppliers
     - Repeated solicitation for user need analysis
     - Little response

PROBLEMS STATEMENTS

- **Mobile display devices vary significantly with regard to**
  - Image quality
  - Color rendering characteristics
  - Dynamic behaviors (ambient adjustments, DCC, power savings)
- **No standard color image data processing pipeline across mobile devices**
- **Display and platform technology changes rapidly**
  - Engineering trade offs do not always favor image and color quality and consistency
  - Especially true for mass production – non specialty displays
- **No standard target color rendering condition defined for display modalities used in medical applications**
- **The result:**
  - The same digital data displays differently on different devices
  - Image and color quality is poorly defined and controlled

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ISSUES AND NEXT STEPS

- **Determine requirements**
  - Taxonomy of uses cases
  - Reproduction Aims
  - Calibration enough?
    - Calibration and characterization both needed?
  - Ambient/stray light compensation required?
  - Dynamic controls to be defeated?
- **Quantify “out of box” mobile display variability**
- **Determine architecture**
  - Server based
  - Client based
  - In-app
  - In-OS
- **Interested parties**
  - Contact amasia@xrite.com

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DISCUSSION