

*Richmond, VA USA*

# **IPAC'15 Technical Debrief**

*Padova, Italy*

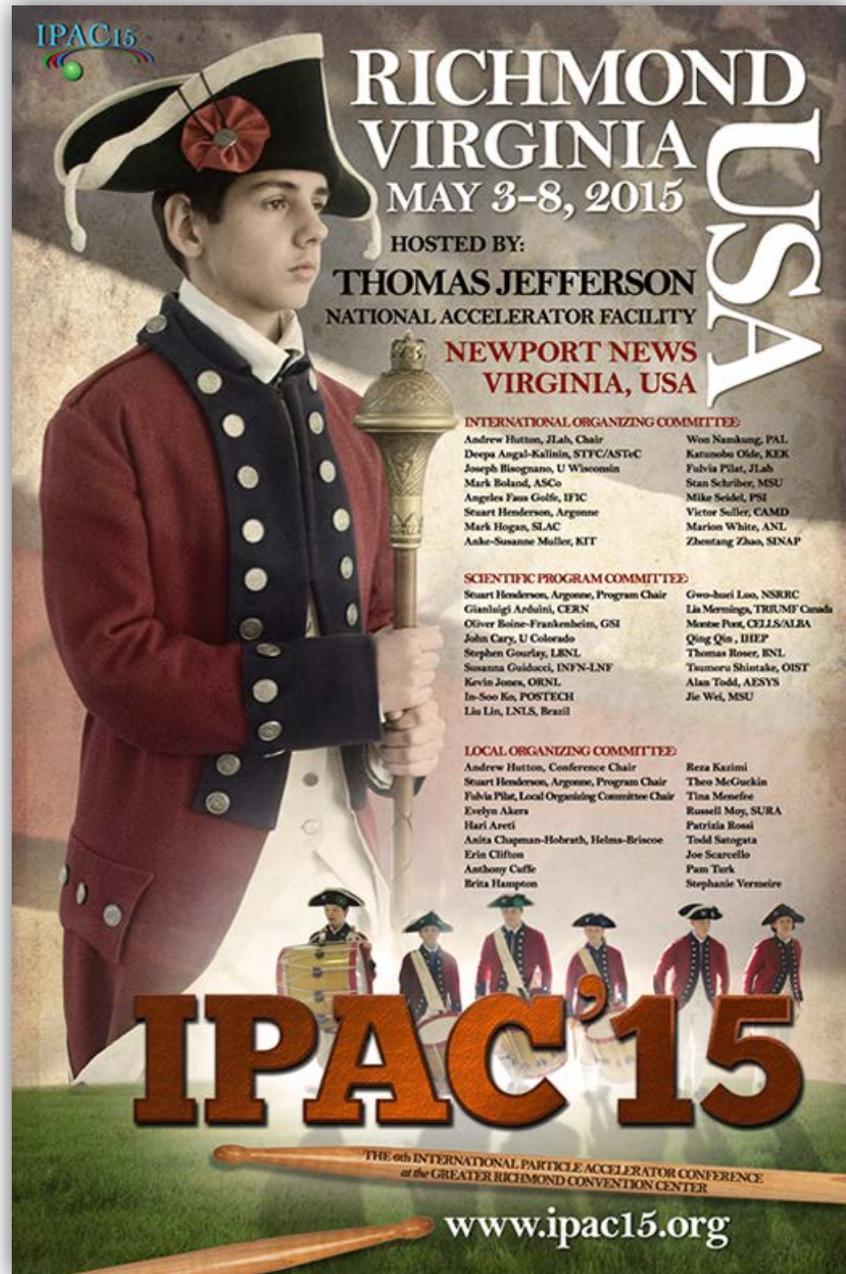
*2015 JACoW Team Meeting*

**Anthony Cuffe**



# Overview

- Credits
- Setup/Hardware
  - Overview
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  - Registration
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- Advice for Future Planners
- More Information
- Q & A



**IPAC15**

# RICHMOND VIRGINIA USA

MAY 3-8, 2015

HOSTED BY:  
**THOMAS JEFFERSON**  
NATIONAL ACCELERATOR FACILITY  
**NEWPORT NEWS VIRGINIA, USA**

**INTERNATIONAL ORGANIZING COMMITTEE:**

|                                 |                      |
|---------------------------------|----------------------|
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| Deepa Angal-Kalinin, STFC/ASTeC | Katsuhiko Oide, KEK  |
| Joseph Biognano, U Wisconsin    | Fabrizio Pilat, JLab |
| Mark Roland, ASCo               | Stan Schriber, MSU   |
| Angela Faus Goffe, IFIC         | Mike Seidel, PSI     |
| Stuart Henderson, Argonne       | Victor Suller, CAMD  |
| Mark Hogan, SLAC                | Marion White, ANL    |
| Anke-Susanne Müller, KIT        | Zhentang Zhao, SINAP |

**SCIENTIFIC PROGRAM COMMITTEE:**

|  |                             |
|--|-----------------------------|
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| Gianluigi Arduini, CERN                  | Liz Merminga, TRIUMF Canada |
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| John Cary, U Colorado                    | Qing Qin, IHEP              |
| Stephen Gourlay, LLNL                    | Thomas Roser, BNL           |
| Susanna Guiducci, INFN-LNF               | Tsunoru Shintake, OIST      |
| Kevin Jones, ORNL                        | Alan Todd, AESSYS           |
| In-Soo Ko, POSTECH                       | Jie Wei, MSU                |
| Liu Lin, LNLs, Brazil                    |                             |

**LOCAL ORGANIZING COMMITTEE:**

|  |                    |
|--|--------------------|
| Andrew Hutton, Conference Chair                  | Reza Kazimi        |
| Stuart Henderson, Argonne, Program Chair         | Theo McGuckin      |
| Fabrizio Pilat, Local Organizing Committee Chair | Tina Menefee       |
| Evelyn Akers                                     | Russell Moy, SURF  |
| Hari Areti                                       | Patrizia Rossi     |
| Anita Chapman-Hobarth, Helms-Briscoe             | Todd Satogata      |
| Erin Clifton                                     | Joe Scarcello      |
| Anthony Caffe                                    | Pam Turk           |
| Erica Hampton                                    | Stephanie Vermeire |

# IPAC'15

THE 15th INTERNATIONAL PARTICLE ACCELERATOR CONFERENCE  
at the GREATER RICHMOND CONVENTION CENTER

[www.ipac15.org](http://www.ipac15.org)

# Special Thanks

## IPAC'15 IT Team

Theo McGuckin

Erik Werlau

Evelyn Akers

Johan Olander

Takashi Kosuge

Dong Eon Kim

Kyung-Sook Kim

## JACoW Developers

Raphael Muller

Ivan Andrian

Volker Schaa

Jan Chrin

Stefano Deiuri

Matt Arena



# Hardware - Overview

- ⦿ PC Workstations (~40) (\$1200)
- ⦿ Mac Mini Workstations (2) (\$600)
- ⦿ Backup/CIFs Server (1) (\$1200)
  - Editor's Workstation with extra drive (500GB)
- ⦿ 24" (1920x1200 ) Monitors (42) (\$240)
- ⦿ Presenter Laptops (6) (\$1800)
- ⦿ General Purpose Laptops (10 ) (\$300)
  - Timers, Dotting Boards and Loaners
- ⦿ MacBook Laptops (6) (\$285)
- ⦿ 8-Port Network Switches (16) (\$800/\$80)
  - Cisco 2960-CG (Unmanaged Mode)
  - NetGear Gigabit Pro Series
- ⦿ Printers (5)
  - HP LaserJet Color CP425DN (2) (\$650)
  - Brother Color Multi-Function 9840N (3) (\$495)



- ⦿ Dot Boards (3) (\$875 Total )
  - 40" Sony Bravia (\$575)
  - ThinkPad E550 Laptops (\$300)
- ⌘ Spares
  - 24" Monitors (2 – Not Enough!)
  - Editor's Workstation (2)
  - Presenter Laptops (1)
  - Timer Laptops (1)
  - Mac Laptops (1)
  - Toner Cartridges for Printer

# Hardware - Summary

| Venue               | Windows PC            |                      | Macintosh PC |                | Monitors           |                       | Printers                        |                           |
|---------------------|-----------------------|----------------------|--------------|----------------|--------------------|-----------------------|---------------------------------|---------------------------|
|                     | Desktop<br>Dell T1700 | Laptop<br>Dell M4800 | Mac Mini     | MacBook<br>Pro | 24"<br>Dell U2412M | 40" TV<br>Sony Bravia | Multi-Function<br>Brother 9840N | Postscript<br>HP CP4525DN |
| Proceedings Office  | 22                    |                      | 2            |                | 21                 |                       |                                 | 2                         |
| Author Reception    | 4                     |                      |              |                | 4                  |                       | 1                               |                           |
| Speaker Preparation |                       | 4                    |              | 2              |                    |                       |                                 |                           |
| Internet Café       | 10                    |                      |              |                | 10                 |                       |                                 |                           |
| Auditoriums (A,B,C) |                       | 3                    |              | 3              | 3                  | 3                     |                                 |                           |
| Business Office     | 3                     |                      |              |                | 3                  |                       | 1                               |                           |
| IPAC'15 Office      | 1                     |                      |              |                | 1                  |                       | 1                               |                           |
| Registration        |                       | 1                    |              |                |                    |                       |                                 |                           |
| Dotting Boards      |                       | 3                    |              |                |                    | 3                     |                                 |                           |
| Timers              |                       | 3                    |              |                |                    |                       |                                 |                           |
| Spares              | 2                     | 3                    |              | 1              | 2                  |                       |                                 |                           |
| <b>Total</b>        | <b>42</b>             | <b>17</b>            | <b>2</b>     | <b>6</b>       | <b>44</b>          | <b>6</b>              | <b>3</b>                        | <b>2</b>                  |

# Proceedings Office

## ⊙ Editor's Windows Workstation (20)

- Dell Precision T1700, Intel Xeon Quad Core 3.5Ghz
- 8 GB 1600Mhz RAM
- 512MB NVIDIA Quadro® NVS 310
- 256 GB Crucial MX200 SSD
- 24" Dell Ultrasharp U2412M (1920x1200)

## ⊙ Editor's Mac Workstation (2)

- Mac Mini (2015) w/8Gb Ram
- 24" Dell UltraSharp U2412M (1920x1200)

## ⊙ Printers (2)

- HP Color LaserJet CP4525DN

## ⊙ 8 Port Network Switches (6)

- Cisco 2960-CG (Unmanaged Mode)

## ⊙ Backup Server/CIFs File Server

- Editor's Workstation with 500GB drive
- CentOS 6 w/Samba

## ⊙ Spares

- 24" Monitor (0)
- Editor's Workstation (2)

## ⊙ Staff Wi-Fi



# Proceedings Office



# *Proceedings Office*



# Author's Reception

## ⦿ Windows Workstation (4)

- Dell Precision T1700, Intel Xeon Quad Core 3.5Ghz
- 24" Dell Ultrasharp U2412M (1920x1200)
- Exact same setup as Proceedings Office

## ⦿ 8 Port Network Switch (1)

- Cisco 2960-CG (Unmanaged Mode)

## ⦿ Multi-Function Printer (1)

- Brother Multi-Function 9840N

## ⦿ Staff Wi-Fi



# *Author's Reception*



# Speaker Preparation

## ⦿ Windows Presenter Laptop (4)

- Dell M4800 Intel Quad Core i7 2.9Ghz
- 16GB 1600Mhz RAM\
- 15,6" TFT (1920x1080) Display
- DP, VGA and HDMI Output



## ⦿ Mac Presenter Laptop (2)

- 15" 2014 Macbook Pro



## ⦿ General Purpose Laptop (3)

- Lenovo ThinkPad E550 i7 w/8Gb
- Setup for Timers, Dot Boards and Loaners



## ⦿ 8-Port Network Switches (2)

## ⦿ Spares

- Macbook Pro (1)
- Dell M4800 (1)
- Lenovo ThinkPad (1)

## ⦿ Staff WiFi

# *Speaker Preparation*



# Auditoriums - IT

## ⦿ Windows Presenter Laptop (3)

- Dell M4800 Intel Quad Core i7 2.9Ghz
- 16GB 1600Mhz RAM\
- 15,6" TFT (1920x1080) Display
- DP, VGA and HDMI Output
- Exact same as used in Speaker Preparation!



## ⦿ Mac Presenter Laptop (1)

- 15" Macbook 2014 Pro
- Exact same as used in Speaker Preparation!

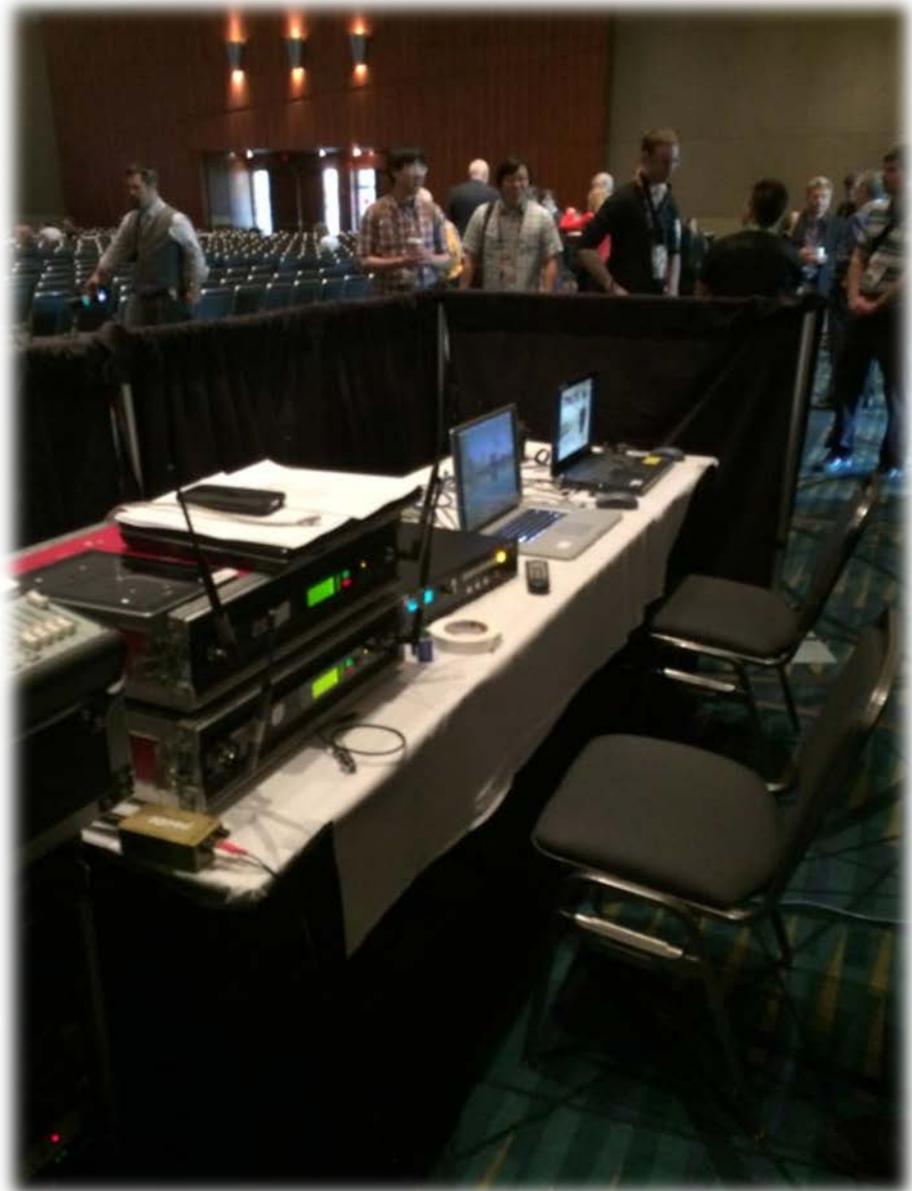


## ⦿ Timer Laptop (3)

- JACoW developed java timer application
- [www.jacow.org](http://www.jacow.org) >> Tools >> Software
- Auto start Firefox with local copy
- Required configuration in the source code.
- No network connection necessary !



# Auditoriums



# Auditoriums – A/V

## ⦿ Presenter Monitors (3)

- Podium Monitor for Speaker
- 24" Dell Ultrasharp U2412M (1920x1200)

## ⦿ Stage/Presentation Monitor (3)

- Stage Monitor for Speaker and Chairman
- 40" Sony Bravia (1080p) w/Floor Stand



# Internet/Paper Café

## ⊙ Windows Kiosks (12)

- Dell Precision T1700
- 24" Dell UltraSharp U2412M (1920x1200)
- Used "Deep Freeze" by Faronics to create Windows Kiosks
- Exact same setup as Proceedings Office



## ⊙ Laptop Spaces (4 Tables)

## ⊙ 8-Port Network Switches (2)

## ⊙ Delegate Wi-Fi



*Setup/Hardware*

# *Internet/Paper Café*



# Registration

## ⦿ Kiosk Laptop

- Lenovo ThinkPad E550
- Registration/Profile Updates
- *Must be Hard-Wired!*

## ⦿ Delegate Wi-Fi



# ***Business Offices***

## ◎ **IPAC'15 Business Office**

- Registration Support
- On-Site Payment and Registration
- Badge and Receipt Prints
- Staff Support

## ◎ **PCO Business Office**

## ◎ **Windows Workstation (3)**

- Dell Precision T1700
- 24" Dell Ultrasharp U2412M (1920x1200)
- **Exact same setup as Proceedings Office**

## ◎ **8-Port Network Switches (2)**

## ◎ **Multi-Function Printer (2)**

- Brother Multi-Function 9840N
- Very Well Utilized!

## ◎ **Staff Wi-Fi**



# Staff Office

## ⦿ Windows Workstation (1)

- Dell Precision T1700
- 24" Dell Ultrasharp U2412M (1920x1200)
- Exact same setup as Proceedings Office

## ⦿ Multi-Function Printer (1)

- Brother Multi-Function 9840N

## ⦿ Staff and Delegate Wi-Fi

## ⦿ Stand Up Meetings

## ⦿ Staff Support



# ***Around the Venue***

## ◎ **Dot Boards (3)**

- 40" Sony Bravia w/stand
- ThinkPad E550 Laptops
- New CSS version (Stefano)



## ◎ **Charging Stations (2)**

- Rented from A/V Company
- Expensive (~\$2500/ea)
- Paid for by Sponsorship

# Networking

## ⦿ 2 Isolated and Dedicated Networks

- Staff Segment (40Mbs Bandwidth)
- Delegate Segment (150Mbs Bandwidth)
- Isolation between networks for security and performance



## ⦿ Staff Network (40Mbs)

- Staff Offices and Staff Wi-Fi
- Multiple hard wire drops in each occupied location
- Giga-Bit Switches (12) for distribution
- Static and DHCP Addresses

## ⦿ Delegate Network (150Mbs)

- Delegate Wi-Fi and Internet Café

## ⦿ Costs for Network Drops and Wireless – **\$45,000**

- *Be prepared to state and re-state your requirements!*

- *Months of negotiation from initial \$112,000!*



# *Networking*



# Networking - Wireless

## ⦿ High Density Xirrus (XR-2436) Arrays

- Access Arrays for high volume areas (3)
  - *Exhibition Hall*
  - *Break Area Outside of Sessions*
  - *Registration Area/Poster Sessions*
- Each Array capable of hosting 750-1500 simultaneous devices (we assumed ~750).
- Mobile for easy coverage tuning

## ⦿ Cisco Aironet Access Points

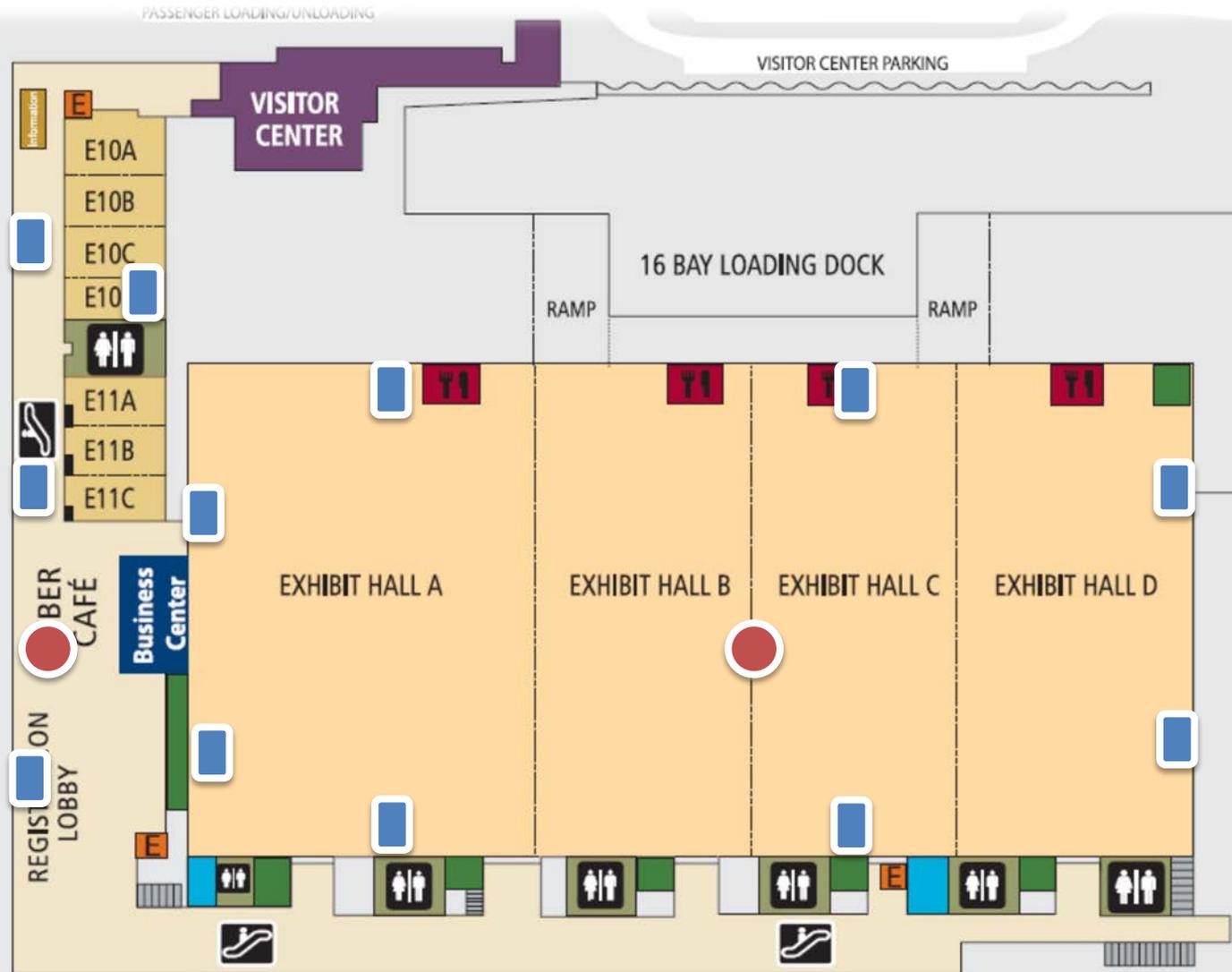
- Wireless Access Points used throughout the venue for low volume areas (30+)
- Each AP capable of supporting 30-40 simultaneous devices
- Portable access points for quick coverage fixes

## ⦿ Size Planning

- Requirement for between 2500 and 3000 Devices
- Assumed 1500-2000 Delegates



# Wireless - 1<sup>st</sup> Floor (Exhibition/Registration)

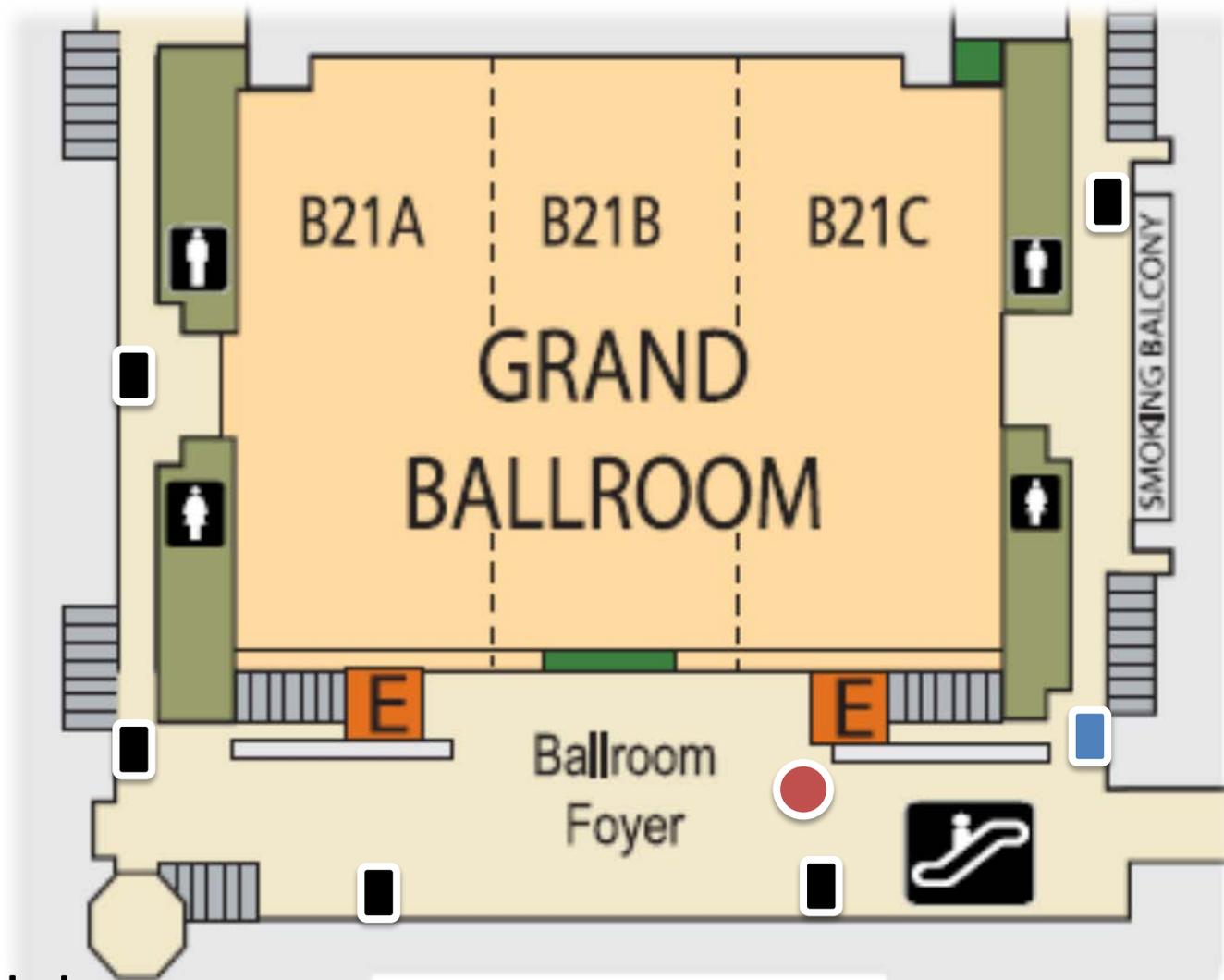


Xirrus WAA (XR-2436)



Cisco WAP (Aironet)

# Wireless - 2<sup>st</sup> Floor (Break Area)



Disabled

Jefferson Lab

Xirrus WAA (XR-2436)

Cisco WAP (Aironet)

Networking

# Software – Proceedings Office

## ⊙ Editor's Windows Workstations

- JACoW automated bundle utilized for initial image(*Raphael*)
  - **Software List:** <http://www.jacow.org/index.php?n=Editors.RecommendedSoftware>
- Manual configuration of PitStop, Acrobat Pro and MsWord
  - **Procedures:** <http://www.jacow.org/index.php?n=Editors.SoftwareSettings>
- All configuration done with a created user (*not the default Admin account!*) in order to preserve them after “*sysprep.*”
- Master system was made unique using Microsoft's OEM tool “*sysprep.*”
- Systems were cloned and replicated using a disk replicator (\$450) and Clonezilla (Free).

## ⊙ Editor's Mac Workstations

- Manual configuration of PitStop, Acrobat Pro and MsWord
  - **Procedures:** <http://www.jacow.org/index.php?n=Editors.SoftwareSettings>
  - Took around (20) minutes per workstation

## ⊙ Red/Yellow/Green Dot Plugin (*Ivan*)

- Plugin to tag papers in lieu of stickers
- Manual install in Acrobat Plugins
- Saved time, money and looked pretty



# Software – Speaker Preparation and Auditoriums

## ⊙ Windows and MacBook Pro Laptops – *All identically configured!*

### ○ JACoW automated bundle utilized for initial install (*Raphael*)

- **Software List:** <http://www.jacow.org/index.php?n=Editors.RecommendedSoftware>

### ○ Manual configuration of other software using **Ninite** (*ninite.com*)

- Ninite – installs or updates multiple apps at once – ninite.com

#### 1. Click all the apps you want

You can learn more about a program by hovering over it.

#### 2. Click Get Installer and run it

Ninite installs apps for you in the background. No clicking next. We say NO to toolbars or other junk.

#### 3. Run it again later

Your installer will update apps to the latest versions. If something is up-to-date we'll skip it.

The screenshot displays the Ninite website's software selection interface. It features a grid of application categories with checkboxes for selection. The categories and their contents are:

- Web Browsers:** Chrome (checked), Opera Chromium, Firefox (checked).
- Messaging:** Skype, Pidgin, Google Talk, Thunderbird, Trillian, AIM, Yahoo!.
- Media:** iTunes, Hulu, VLC (checked), KMPlayer, AIMP, foobar2000, Winamp (checked), Audacity, K-Lite Codecs (checked), GOM, Spotify, CCCP, MediaMonkey, QuickTime (checked).
- Compression:** 7-Zip (checked), PeaZip, WinRAR (checked).
- Runtimes:** Java 8 (checked), .NET 4.5.2, Silverlight (checked), Air, Shockwave.
- Utilities:** TeamViewer, ImgBurn, Auslogics, RealVNC, TeraCopy, CDBurnerXP, Revo, Launchy, WinDirStat, Glary, InfraRecorder, Classic Start.
- Imaging:** Paint.NET, Picasa, GIMP, IrfanView, XnView, Inkscape, FastStone, Greenshot.
- Documents:** OpenOffice (checked), Reader (checked), SumatraPDF, Foxit Reader, CutePDF, LibreOffice (checked), PDFCreator.
- Security:** Essentials, Avast, AVG, Malwarebytes, Ad-Aware, Spybot 2, Avira, Super.
- File Sharing:** qBittorrent, eMule.
- Online Storage:** Dropbox, Google Drive, Mozy, OneDrive, SugarSync, BitTorrent Sync.
- Developer Tools:** Python, FileZilla, Notepad++ (checked), JDK 8, JDK x64 8, WinSCP, PuTTY, WinMerge, Eclipse.

At the bottom center, there is a prominent green button labeled "Get Installer".

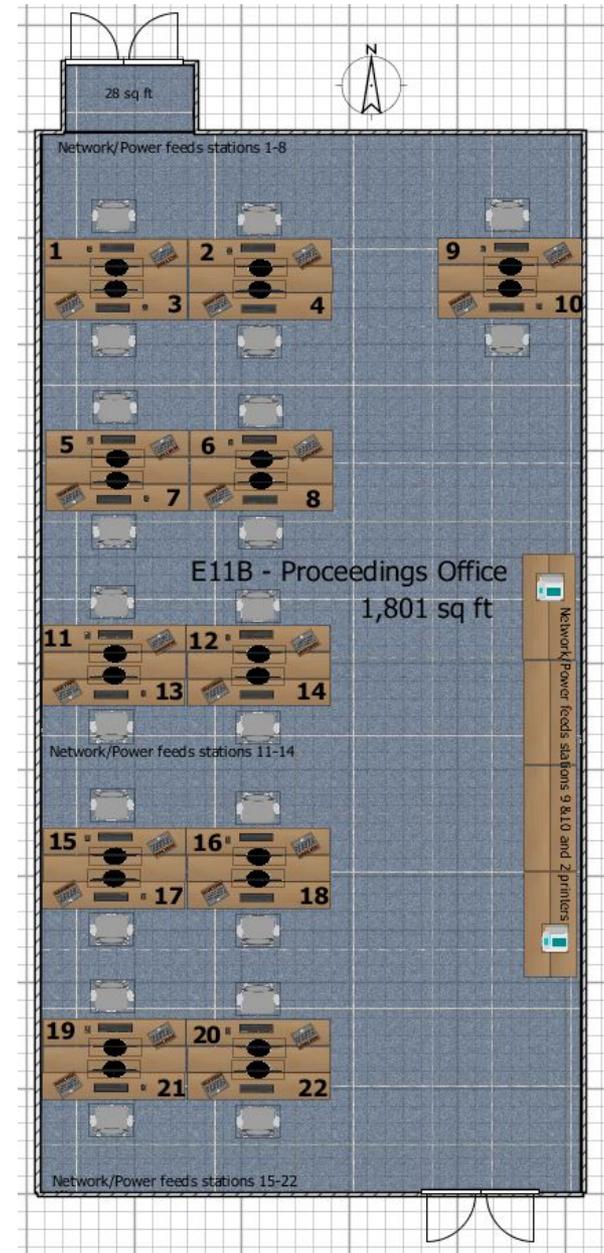
# Software – Kiosks for Internet Café

- ⦿ Windows Kiosks created using “*Deep Freeze*” by Faronics
  - Create a “Frozen” configuration for use in public areas
  - System is rebooted and reset at each logout
  - Central Management Console
  - Systems can easily be unfrozen/refrozen quick for tweaks
  - 30-day Demo
  - Worked very well to provide a fully-featured kiosk.
- ⦿ Various Linux based kiosks were tested but all had issues.
- ⦿ Microsoft’s kiosk modes were likewise tested but had serious shortcomings.



# Space Planning

- ⦿ Layouts created for all IT spaces (*Theo McGuckin*)
- ⦿ Layouts created with **Sweet Home 3D** (*sh3d*)
  - Free interior design application
  - <https://www.sweethome3d.com>
- ⦿ Spaces were perfectly laid out and provided plenty of space for editors.
- ⦿ Helped to avoid surprises – everything fit!



# Space Planning



# **Ergonomics** *Proceedings Office and Author's Reception*

## ◎ Workspaces

- Deep and wide enough to work with printed papers.
- Extra Space for Laptops and other gear.

## ◎ Chairs

- Ergonomic and comfortable but more adjustable chairs would have been better.



## ◎ Lighting

- Could have been better. Natural light from windows would have been nice.
- Lights were adjusted to try to make workspaces as bright as possible.

# *Usage Statistics*

## ⦿ Paper Consumption: 10,000+

- Proceedings Office: ~9,000 pages
- Business Office : ~1,000 pages
- Author Reception: ~200 pages
- Multiple Toner Cartridge Replacements

## ⦿ Papers/Talks Processed: 1300+

## ⦿ Network Bandwidth:

- Staff Network (40Mbps): average bandwidth usage of 15Mbps with frequent peaks above 30 Mbps.
- Delegate Network (150Mbps): average bandwidth usage of 22Mbps with frequent peaks above 81Mbps.

## ⦿ Devices on Wireless

- 1443 registered devices.
- 400-550 average devices per with a maximum of 659.

# ***Cost Summary - Major Items***

- ⦿ Networking/Wireless ***\$45,000***
- ⦿ Audio Visual ***\$60,000***
- ⦿ Technical Rentals ***\$16,000***
  
- ⦿ Equipment Purchased by Lab and Loaned to Conference *(No cost to Conference)*
  - Mass Workstation Purchase ***\$81,000***
  - Mass Laptop Purchase ***\$14,000***

# *What went right?*

- ◎ Staff clearly learned from lessons of the past.
- ◎ Purchasing instead of renting worked very well.
  - *Chosen hardware was very good*
  - *Allowed plenty of time for configuration*
  - *Spares were readily available (except monitors and power cords!).*
- ◎ Systems were installed and nearly flawless before Editors arrived.
  - *Systems were patched and configured prior to cloning.*
  - *Very little configuration at the venue was necessary.*
  - *Editing began before most editors arrived.*
  - *L.O.C. Admins were available and quick to respond to anything.*
- ◎ Network Bandwidth was very good (well worth the effort)!
- ◎ Wireless Networking was nearly flawless!

# *What could have gone better?*

- ⦿ Extra microphones
- ⦿ Extra power strips (PDUs)
- ⦿ Extra extension cords
- ⦿ Extra monitors
  - Some people want two
  - A/V requirements always need more (*timers*).
- ⦿ IT/AV needs for breakout meetings were not well communicated beforehand to the IT planners.

# Advice for Future Planners

- ⦿ Learn from Lessons from the past!
  - *Send as many people to as many conferences as you can.*
- ⦿ Be Flexible!
  - *Don't think the requirements of your conference will exactly the same as the last one. (Printers?)*
- ⦿ Bring extra:
  - *Power strips*
  - *Extension Cords*
  - *Monitors*
  - *Stock up on sleep*
- ⦿ Plan on spending lots and lots of time with the network staff beforehand.
- ⦿ Having people with experience in Speaker Prep made it run like clockwork. Send a Speaker Manager to at least one conference for training.
- ⦿ A/V and IT should perhaps be separate people. It is a bit too much.
- ⦿ Draft intelligent dedicated people as early in the process as you can. You can't do it alone. Bring as many as they will allow you.

# *Advice for Future Planners*

⦿ *Don't expect to get anything done at your regular job starting about a month before the conference!*



# *Advice for Future Planners*

© *You will do a lot more than IT!*



# ***More Information***

## ◎ IT Documentation Bundle from IPAC'15

*IPAC15\_IT.zip (uploaded as supplemental file to SPMS)*

## ◎ Previous IT Reports

*<http://www.jacow.org/index.php?n=Editors.ITReportsPreviousExperiences>*

## ◎ Recommended Software List

*<http://www.jacow.org/index.php?n=Editors.RecommendedSoftware>*

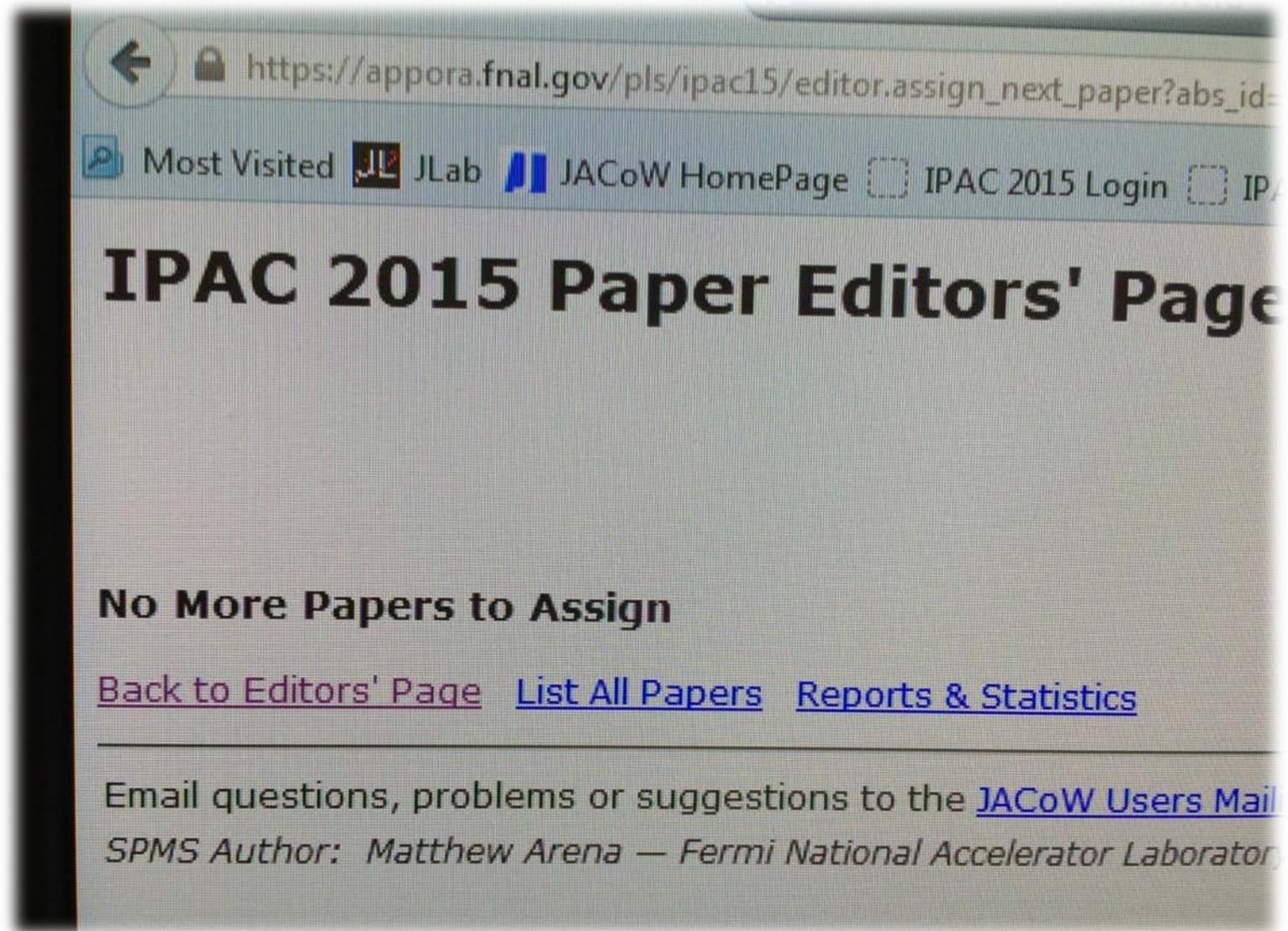
## ◎ Proceedings Office: Recommended Hardware

*<http://www.jacow.org/index.php?n=Editors.RecommendedHardware>*

## ◎ JACoW Information for Organizers

*<http://www.jacow.org/index.php?n=Editors.HomePage>*

# Q & A



# Your Reward





# Special Events - Women in Science



# Special Events - Women in Science

- ⊙ Special Event with Complicated Logistics
  - *Planning and Testing was a Must!*
- ⊙ Panel Format with 9 Participants
- ⊙ 3 Remote Participants
  - *China*
  - *Korea*
  - *Switzerland*
- ⊙ Two Separate Cameras
  - *One Stationary*
  - *Second with an active camera person*
- ⊙ Used Bluejeans for Teleconference
- ⊙ Delegate Network Segment (150Mbs)

