

PERSONALIZING THE CONSUMER EXPERIENCE

INTERACTIVE AND PERSONALIZED FEATURES

MARK CORL, TRIVENI DIGITAL

GREG JARVIS, FINCONS

SO VANG, NAB

PETE VAN PEENAN, PEARL TV



NGTV Application Framework

SMPTE Next Gen TV Conference
January 16, 2020

nextgentv **SUMMIT**

Produced by SMPTE and SBE with support from the NAB and ATSC



and the support of our host, WETA Television



JANUARY 16, 2020



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WITHOUT THEIR VOLUNTEER EFFORTS THIS SUMMIT WOULD NOT BE POSSIBLE

Morning Program



Afternoon Program

8:00 AM - 9:00 AM	Registration and continental breakfast
8:55 AM - 9:00 AM	Welcome from SMPTE, SBE and AES Fred Willard, SBE Washington Kishore Persaud, SBE Baltimore
9:00 AM - 9:05 AM	Introduction Peter Wharton, SMPTE Membership VP Chris Lane, Chief Engineer, WETA
9:05 AM - 9:35 AM	NextGen TV: Transforming the Consumer Experience Lynn Claudy, SVP Technology, NAB and Chairman, ATSC Board of Directors Madeleine Noland, President, ATSC
9:35 AM - 10:00 AM	Creating New Opportunities with NextGen TV Joonyoung Park, VP and Fellow, DigiCAP
10:00 AM - 10:35 AM	Improved Television Reception for Consumers <i>Implementing NextGen TV Distribution Systems</i> John Lynch, ERI Jeff Andrew, Osborn Engineering
10:35 AM - 11:15 AM	Benefits of a Converged Broadcast and IP Platform Lynn Claudy, SVP Technology, NAB and Chairman, ATSC Board of Directors Content Reception Enhancements Richard Lhermitte, VP Solutions and Market Dev, ENENSYS TeamCast
11:15 AM - 11:30 AM	Morning Break
11:30 AM - 11:50 AM	Consumer Applications for Combined 5G & NextGen TV Networks Josh Arensberg, M&E Business Development, Verizon Media
11:50 AM - 12:15 PM	Case Study: Hybrid Services at "Chicago 3.0" Jean Macher, Harmonic
12:15 PM - 01:20 PM	Buffet Lunch ▶

01:25 PM - 01:45 PM	Protecting the NextGen TV Consumer <i>Advanced EAS and AWARN Capabilities</i> John McCoskey, SpectraRep
01:45 PM - 02:15 PM	Monetizing the NextGen TV Consumer <i>Addressable Advertising and Analytics</i> Rick Ducey & Mark Fratrik, BIA
02:20 PM - 03:20 PM	Personalizing the Consumer Experience <i>Interactive and Personalized Features</i> Mark Corl, Triveni Digital Greg Jarvis, Fincons So Vang, NAB Pete Van Peenan, Pearl TV
03:25 PM - 03:40 PM	Afternoon Break
03:40 PM - 04:10 PM	The Consumer Out-of-Home Experience <i>Mobile & Automotive Applications and FeMBMS (5G Broadcast)</i> Thomas Janner, Product Management & R&D Director, Rhode & Schwarz
4:10 PM - 4:35 PM	The ATSC 3.0 Roadmap Lynn Claudy, SVP Technology, NAB and Chairman, ATSC Board of Directors Madeleine Noland, President, ATSC
4:35 PM - 5:00 PM	The Consumer Technology Roadmap Brian Markwalter, SVP Research and Standards The Consumer Technology Association
5:00 PM - 6:00 PM	Station Group and Industry Deployment Plans <i>Advanced Capability Implementation Strategies</i> Skip Pizzi, VP Technology Education & Outreach, NAB (Moderator) Michael Bouchard, VP Technology Strategy, ONE Media / Sinclair Stacey Decker, CTO, Public Media Group Sasha Javid, COO, The Spectrum Co
6:00 PM - 8:00 PM	Cocktail Reception Busboys and Poets 4251 S. Campbell Ave., Shirlington <i>Heavy Hors d'oeuvres and open bar</i> ▶

Who is Pearl?

A business organization of U.S. broadcasters with a shared interest in promoting local broadcast TV content and in developing media and wireless platforms



Phoenix – ATSC 3.0 Model Markert

Open, collaborative testbed

Developing basic TV service

Testing consumer propositions

Testing cable integration

Developing industry frameworks for station transition and service delivery

Phoenix Model Market - Broadcasters



NBCUniversal
Owned Television Stations



TEGNA



E.W. Scripps Company's KNXV Channel 15 (ABC)

Fox Television Stations' KSAZ Channel 10 (FOX)
KUTP Channel 26 (MyTV Network)

Meredith Local Media Group's KPHO Channel 17 (CBS)
KTVK Channel 24 (Independent)

Nexstar Media Group's KASW Channel 49 (CW Network)

Telemundo Station Group's KTAZ Channel 39 (Telemundo)

Tegna's KPNX Channel 12 (NBC)

Univision's KFPH-CD Channel 35 (UniMas)
KTVW-DT Channel 33 (Univision)

Arizona Television, KAZT Channel 7

Arizona PBS – KAET Channel 8

Growing ecosystem

- Open NGTV testbed
- TV manufacturers
- Technology vendors
- Consumer testing
- Transmission testing



Application and Framework Overview

Broadcaster Goals – Application Framework

- Consistency in navigation and behavior
 - Avoid confusion/conflicting user experiences
- Enable innovation
 - Develop new kinds of value-added experiences
 - Test consumer value propositions
- Minimize CE device test burden
- Minimize development and support costs

Illustrative software stack

Common Consumer Application

Common UI

Broadcaster applications

Common Component Framework

Security & Protection

Content Replacement

Application management

Resource management

Identity & privacy
management

Addressable & Audience Data

Guide data access,
normalization

Startover service

ATSC 3.0 Receiver

APIs

Storage

Audio & Video

Runtime & media
player

Watermark
extraction

Security &
Protection

Application Cloud Services

Program
information

OTT A/V delivery

Application
content

Application
management

Security &
Protection

Ad delivery

Common Application & Framework Features

Common Application

- First Time User Experience
- Call-to-action notification
- Home screen menu
 - Broadcaster logo / style
 - Channel and local time display
 - App language selection
 - Watching / on next
 - CC on/off indicator
- Consumer interactive features (by broadcaster)
 - Weather widget
 - VOD clips
 - Alerting Display
 - Polling, Voting

Framework

- Lifecycle management
- Content Protection handling
- Message handling
- Remote control navigation
- Application instrumentation
- Authentication
- Alerting controls
- Language, rating detection
- Streaming playback controls
- Identity management
- Privacy controls
- Receiver API integration
- Connectivity & resource management
- Video controls

Ancillary Components and services

- Receiver Emulator
- API Tester (unit test module)
- Starter Home Screen & basic apps, widgets
- Conversion tools (MRSS to JSON, other)
- Common terms of service and privacy protections
- Onboarding, workshops
- Zoo testing

Operational Considerations

- IP Infrastructure
- CMS, automation/playout system integration
- Application Servers
- Origin server(s) for VOD clips, segments
 - Prime screen formatting (10' viewing)
- Ad decisioning and serving
- Service and Content Protection
- Service Monitoring

Thank You

FROM THE SMPTE WASHINGTON DC SECTION

THANK YOU