



ATSC 3.0 Datacasting Enters A New Development Phase

PROGRESS AND NEW APPLICATIONS

A Two-Part Webinar Series

Josh Gordon | Project Producer
Strategic Marketing Advisor
ONE Media 3.0



ONEMedia 3.0
SINCLAIR
BROADCAST GROUP

WEBINAR #1



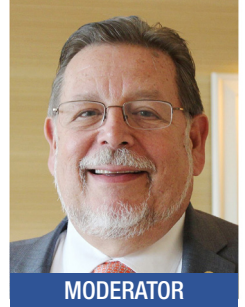
Stacey Decker
SVP, Innovation & Systems
CPB



John Hane
President
BitPath



Josh Weiss
CEO
ARK Multicast



MODERATOR
Mark Aitken
EVP Advanced Technology
Sinclair Broadcast

WEBINAR #2



Avneesh Prakash
Global Head,
Mobility & MOVE
Tata Communications




Dan Teeter
AutoMobility Advisors
Previously Ford & Nissan



Ted Korte
VP of Tech
USSI Global



MODERATOR
Skip Flenniken
VP & GM Tech Business Dev.
Sinclair Broadcast

 This white paper contains a summary article and link to a video recording of each of the two webinars.

Introduction

ATSC 3.0 datacasting is at a turning point. Over the past year, activity has moved past building the ATSC 3.0 datacasting proof of concept (POC) and toward to evaluating specific business applications for companies. In short, we have moved past POCs and begun the process of selling ATSC 3.0 spectrum. This two-part webinar series covers six examples.

This two-part webinar series covers six different ATSC 3.0 datacasting applications with a speaker for each.

Webinar #1

- CDN data delivery (ARK Multicasting)
- Public safety/emergency alerting (Corporation for Public Broadcasting)
- Enhanced geolocation (BitPath)

Webinar #2

- Wireless data transport for IOT (Tata MOVE)
- Wireless data transport for automotive (AutoMobility Advisors)
- Digital signage (USSI Global)

This document contains a summary article on each of the two webinars including a link to an on-demand video recording of the event.

Special thanks to the speakers who agreed to participate in these sessions. The examples represent a small percentage of the datacasting applications being tested. As the testing moves toward company-specific applications, most results are not being shared publicly. This webinar series is a rare opportunity to see a trend developing behind the scenes.

Special thanks also to Mark Aitken and the ONE Media 3.0 subsidiary of Sinclair Broadcast Group he leads. Without their support this project would not have been possible.

Josh Gordon | Project Producer
Strategic Marketing Advisor
ONE Media 3.0

WEBINAR #1 | SPEAKERS



Stacey Decker

SVP, Innovation & Systems
CPB



John Hane

President
BitPath



Josh Weiss

CEO
ARK Multicast



MODERATOR

Mark Aitken

EVP Advanced Technology
Sinclair Broadcast



PLAY WEBINAR VIDEO

If link is not available go to: <https://www.atsc3advocate.com>

ATSC 3.0 Drives New Mass Data Delivery Market

Tech sends large files simultaneously to 1 million moving targets

Webinar summary by Debora McAdams

America's data pipes are increasingly at risk of clogging. Buffering alone chews up billions of hours per year. ATSC 3.0 data broadcasting, which can deliver large files to a million or more moving receivers with a single transmission, can help alleviate this.

"If you're only sending out small, individual data files, you may not need the broadcaster, but data delivery is vast," said Josh Weiss, CEO of B2B data delivery provider ARK Multicasting. "Consider a 100 Gb Xbox game update delivered to 1 million users," he said. "That's 100 million Gb of data traffic over an ISP network, or a single 100 Gb transmission over ATSC 3.0."

Weiss was among several innovators featured in a recent webinar about new network and service models enabled by ATSC 3.0. He was joined by Stacey Decker, senior vice president of Innovation and System Strategies for the Corporation for Public Broadcasting; John Hane, president of BitPath; and Mark Aitken, president of ONE Media 3.0 and senior vice president of Advanced Technology for Sinclair Broadcast Group.

WEBINAR #1 | SUMMARY

BUILDING A DATA BUSINESS

When full IP-compatibility was achieved with ATSC 3.0, it had the serendipitous effect of opening non-TV-related business opportunities, Aitken said.

“Around two years ago (when NextGen deployment began in earnest), the question of generating revenue became foremost, and what type of revenues could be derived from non-TV datacasting,” he said. The automotive market, for example, is growing more dependent on datacasting for software updates and recalls. “Most analysts see over-the-air delivery of those data fixes as a solution. We’re looking for datacasting holes that are prime candidates for this new broadcast standard to plug into.”

CREATING A 3.0 EDGE CDN

ARK Multicasting is plugging into overloaded ISPs, and CDNs wanting to move to the far edge, using ATSC 3.0 over 283 low-power TV transmitters to reach 106 million people in 39 states.

“We determined we could offload data from ISPs,” Weiss said. For example, one ISP operator told him that Xbox game updates use 65% of network capacity. “High-demand content is congesting the network, but the ISP does not have a CDN built into their networks.”

Instead, content lives in remote servers—i.e., the cloud. When any one of millions of end users makes a content request, it goes out—and is delivered—over the ISP. ARK devised a way to reroute the most-consumed content to its transmitters, and broadcast it out to a home CDN—basically, a 3.0-enabled hard drive.

ARK is using the Streaming Video Technology Alliance’s open caching system to work with multiple CDNs; initial deployment leverages Lumen for the upstream, Broadpeak for downstream, and an ARK/SiliconDust 3.0 home CDN with a 2 Tb hard drive. When content is requested, the device first checks its own hard drive before pinging the cloud.

WEBINAR #1 | SUMMARY

PINPOINT POSITIONING

BitPath, a joint-venture of Sinclair and Nexstar, comprises 400 TV stations contributing bandwidth for a 3.0 datacasting network already covering more than half of the CONUS population. Rather than delivering high-volume content, BitPath is focused on delivering high-value bits, Hane said.

In addition to carrying third-party cargo, BitPath also plugged into a rapidly growing service opportunity:

“Position, Navigation and Timing [PNT] is one of the fastest growing sections of the economy,” said Hane. “Waze, Google Maps, Apple Maps. . . These are actually pretty bad. In verticals that need precise positioning, they know that, and they demand far higher precision than you can get receiving GPS signals from satellites, processed in the phone. PNT uses correction services to refine positioning. Our intent is to provide really good resolution, 24/7, affordably.”

“You have to have a high-value enough service to make devices attractive,” Hane added. “There are many things we can do that don’t take a ton of capacity.”

PUBLIC INTEREST APPLICATIONS

CPB innovation chief Decker sees 3.0 opening new ways for public stations to serve the public across education, public safety, and beyond. About half of the 169 university, state, and community licensees that receive CPB funding are ATSC 3.0 capable, said Decker. So far, 17 have transitioned to 3.0.

“The public media stations are looking at all these opportunities on a case-by-case basis,” he said. “Datacasting opportunities in education have been explored for years. In 3.0, datacasting is a native experience. It could be very useful in a rural space.”

CPB is also running a grant program with FEMA to advance public television stations to make them 3.0-capable in rural, tribal, and underserved areas for advanced emergency alerting. There may be a public interest application for other services, said Decker, including precision location services, recalling a now-retired location technology, Loran C, from his Coast Guard days.

WEBINAR #1 | SUMMARY

As ATSC 3.0 datacasting becomes more mainstream, “I hope to see further investment and entrepreneurial activity,” said Decker. “There’s entrepreneurial activity taking place in the public sector that can be applied to services.”

- To see more on how BitPath and ARK Multicasting can serve the automotive market, download the “[Automotive Use of a Broadcast/Multicast Wireless Network](https://www.atsc3advocate.com/automotive-atsc-download-registration)” [https://www.atsc3advocate.com/automotive-atsc-download-registration] white paper.
- To see more on ATSC 3.0-enabled advanced emergency services, download the “[Advanced Emergency Information \(AEI\) Services Webinar Series and Research Report](https://www.atsc3advocate.com/aei-webinars)” [https://www.atsc3advocate.com/aei-webinars] from ATSC3Advocate.com.

WEBINAR #2 | SPEAKERS



Avneesh Prakash
Global Head,
Mobility & MOVE
Tata Communications



Dan Teeter
AutoMobility Advisors
Previously Ford & Nissan



Ted Korte
VP of Tech
USSI Global



Skip Flenniken
VP & GM Tech Business Dev.
Sinclair Broadcast



PLAY WEBINAR VIDEO

If link is not available go to: <https://www.atsc3advocate.com>

ATSC3- Datacasting Webinar #2 Article For Review

Datacasting in Action: Tier 1 ISP, Connected Cars and Digital Signage.

Webinar summary by Debora McAdams

The singular nature of ATSC 3.0 datacasting is capturing the attention of businesses beyond broadcast TV, where it originated. Because of its unique ability to handle large-file downloads en masse, ATSC 3.0 is being considered as a last-mile alternative for a Tier 1 ISP, an offload option for automotive software updates, and a delivery method for ultra-rich digital signage content.

“There’s a lot of last-mile problems that can be solved with ATSC 3.0,” said Ted Korte, vice president of technology for USSI Global, the 38-year-old Melbourne, Fla., media technology company active in broadcasting and digital signage. “We’re excited about it. For us, it’s the file-based delivery, the robustness, and even some of the content broadcasters have to offer that can provide a lot of value to a lot more areas than it has traditionally by pushing payout decisions to the edge .”

ATSC 3.0—the IP-compatible broadcast television transmission standard—started gaining traction in data delivery a couple of years ago as U.S. population coverage surpassed half the nation. The required TV payload left room for additional data transmission, which could be provided on-demand or all the time for services like enhanced GPS.

The number of connected devices is expected to grow from 14 billion today to 56 billion in 2025, quadrupling the data load of the internet, according to Avneesh Prakash, Tata Communications

WEBINAR #2 | SUMMARY

THE PAYLOAD EXPLODES

The key characteristic that sets ATSC 3.0 apart in datacasting is its ability to deliver large files to millions of moving and stationary targets with a single transmission. The cellular system has to deliver that same file millions of times over individual connections, which makes for an unsustainable, near-future scenario. The number of connected devices is expected to grow from 14 billion today to 56 billion in 2025, quadrupling the data load of the internet, according to Avneesh Prakash, vice president of mobility and head of MOVE for Tata Communications, the Mumbai-based Tier 1 network provider. The projection is particularly relevant for Tata.

“Tata carries around one-third of the internet traffic around the world,” Prakash said. “We cause four out of five mobile calls to actually happen.”

Prakash and Korte shared their insights recently during the second of a two-webinar series on the entrepreneurial applications developing around ATSC 3.0 data broadcasting. They were joined by moderator Skip Flenniken, vice president and general manager of Technology Business Development for Sinclair Broadcast Group; and Dan Teeter, who led Nissan’s North American connected-services effort before joining AutoMobility Advisors.

THE CONNECTED RIDE

Teeter described how the automotive industry is quickly evolving into a connectivity business. Millions of new devices coming online over the next two years will have wheels and will need updates.

“[Over-the-air] updates are now a challenge because they require a point-to-point connection,” Teeter said. “There are ways with ATSC 3.0 to offload some of that volume and reduce reliance on cellular transport.”

Connected features are now the No. 1 differentiator in automotive. Not power, fuel consumption, handling or appearance—but the array of screens, streaming services, telematics and infotainment inside the vehicle. By extension, these options need seamless connectivity, and no single wireless platform has seamless connectivity. Not cellular, satellite, Wi-Fi or even broadcasting. Therefore, vehicles have to rely on a variety of networks, each one suited to its purpose.

The mass delivery of large data files, however, is something only ATSC 3.0 can do, and that could help solve the multi-billion-dollar problem of automotive recalls involving software updates. Just a 10% improvement in the over-the-air delivery success rate of recall updates would save OEMs millions, “and that’s only going to increase,” Prakash said.

WEBINAR #2 | SUMMARY

ADAPT OR DIE

The growing auto-related data payload is just part of the fourfold increase Tata Communications expects to be managing in two years.

“There is a heavy and dense ecosystem out there, in terms of zettabytes of data,” Prakash said. “That affects how devices operate, how devices [work] with humans and hence, how human beings collaborate.

“We talk about what should be processed on the edge or in the cloud, but regardless of where that compute happens, enabling that ecosystem is a fundamental requirement.”

The current network environment is “messy,” he said, with a variety of device types connected through different protocols, communicating among themselves over individual connections. The oncoming data wave is an opportunity for enterprise-level providers like Tata to prepare their networks in a couple of specific ways, he said. One is to move connectivity up the value chain, i.e., from the provider interface to the chip.

“When the chip rolls out, it’s already embedded in TCU,” he said. “It simplifies the value chain, does economies of scale for the manufacturer and for everyone in the supply chain. That’s something we’ve done to alleviate one of the pain points.”

The second thing Tata is doing to adapt is to look at connectivity in terms of being contextual, Prakash said. “Where using various types of connectivity and protocols can bring a better experience, not just to the connected car industry or drivers, but everyone else.”

MOVE uses an intelligent, context-aware connectivity orchestrator agnostic to connectivity types—e.g., LoRaWAN, private networks, Wi-Fi, cellular, satellite, broadcast. By doing so, it’s able to “connect anything, anywhere in the world,” Prakash said. The orchestrator can predict quality-of-service at any point in time for any given asset, so, for example, if a driver prefers a higher-bandwidth app, the orchestrator allocates bandwidth accordingly.

“The context of multimodal connectivity is fundamental to that, because if we have one modality, we can predict anything we want, but unless we have a choice, the experience doesn’t complete.”

ATSC 3.0’s advantage of cost-effective bulk downloads is an important part of that framework, Prakash said.

WEBINAR #2 | SUMMARY

SIGNAGE OF THE TIMES

USSI is leveraging ATSC 3.0 for digital signage on a network of EV charging

“For DOOH, you need to create that experience that’s contextual and relevant to the person in front of it, and you need a lot of data to do that,” Korte said.

USSI is using ATSC 3.0 to deliver high-res content to edge servers, where AI channels it into a hyperlocal experience relevant to time, place, and audience. USSI then uses 4G to collect engagement data, including gender, reaction, number of people in a party, dwell time, people who engaged and those who just walked by.

“The point is, we need a lot of content,” Korte said. “If I have just three things to show, I’m not going to be able to do a lot with that.”



ATSC3Advocate.com

For more information on other ATSC 3.0 webinars, research studies, and information visit <https://www.atsc3advocate.com> or click on the logo.

ATSC3Advocate.com

Visit the archival website for ONE Media 3.0 educational information

<https://www.atsc3advocate.com/>

Watch almost five hours of video with summary articles

<https://www.atsc3advocate.com/webinars>

Advanced Emergency Information Systems

A three-part webinar series on ATSC 3.0 enabled emergency services

- **Webinar #1:** How the American consumer views the competitive market they need to succeed in
- **Webinar #2:** How they can enhance relationships between broadcasters and emergency managers
- **Webinar #3:** The opportunities and challenges they present news departments

Watch a six-part webinar series on Monetizing ATSC 3.0

<https://www.atsc3advocate.com/webinars>

ATSC 3.0 Monetization Webinar Series

A six-part webinar series

Includes a summary article of all six webinars representing nine hours of content and featuring 29 high level speakers. This 21-page document includes links for on demand viewing of the original webinar videos.

Download Industry research studies:

<https://www.atsc3advocate.com/downloads>

What Do Younger Viewers Want From Local TV News?

Comparisons between the four age groups comprising the US local TV news audience

ONE Media 3.0
SINCLAIR
BROADCAST GROUP



The Case for an ATSC 3.0
Advanced Emergency
Information Service