

A CLOUD-READY SOLUTION FOR RADIO AND INTERNET STREAMING AUDIO PROCESSING



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AGENDA

- Media Challenges
- Elements of a Cloud-Ready Solution
- Example: SoftGear™ Technology
- Radio and Internet Streaming Audio Processor Overview
- Case Study



CHALLENGES FACING BROADCASTERS



Changing Business Environment



Shorter Opportunity Window



Un-flexible "Big Iron" Tools



Slow, hard and expensive to scale



Cloud is scary: new tools, skills, management

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Un-flexible "Digital" Solutions

MEDIA PROCESING SOLUTIONS NEED TO BE FLEXIBLE, ADAPTABLE, SCALABLE AND FUTURE-READY!



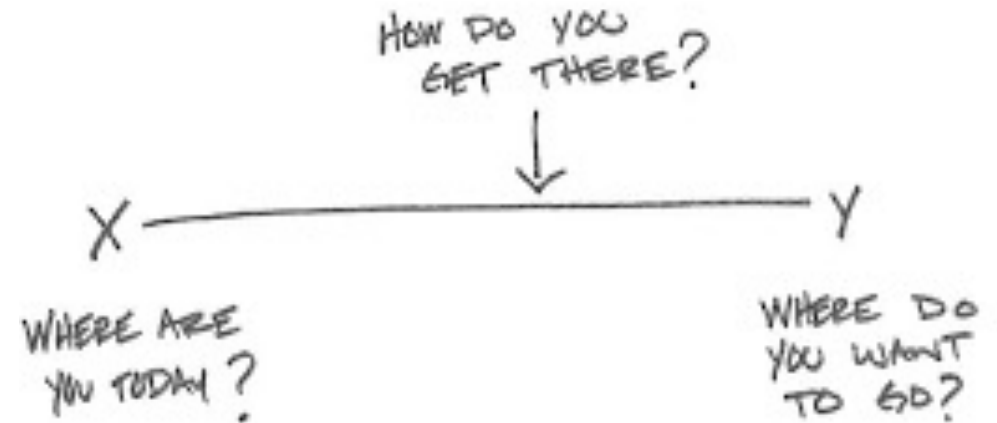
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HOW DO WE GET THERE?

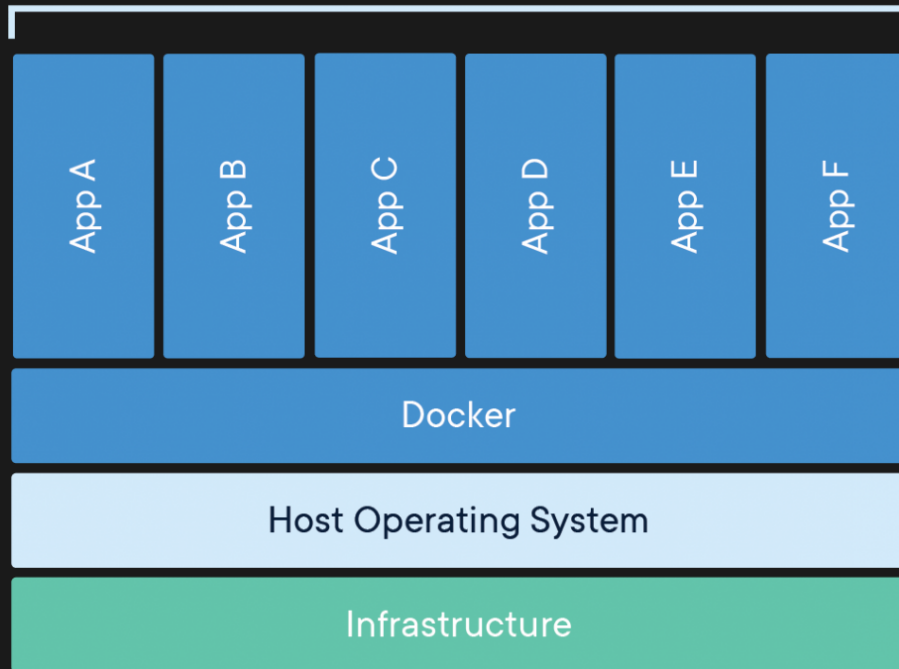
- Virtualized Solutions
- Microservices
- Containers
- Off-the-Shelf Hardware
- An open standardized framework to make it all work
- Multi-vendor plug-and-play ecosystem of media solutions for cloud and on-prem.



PORTABILITY VIA CONTAINERS

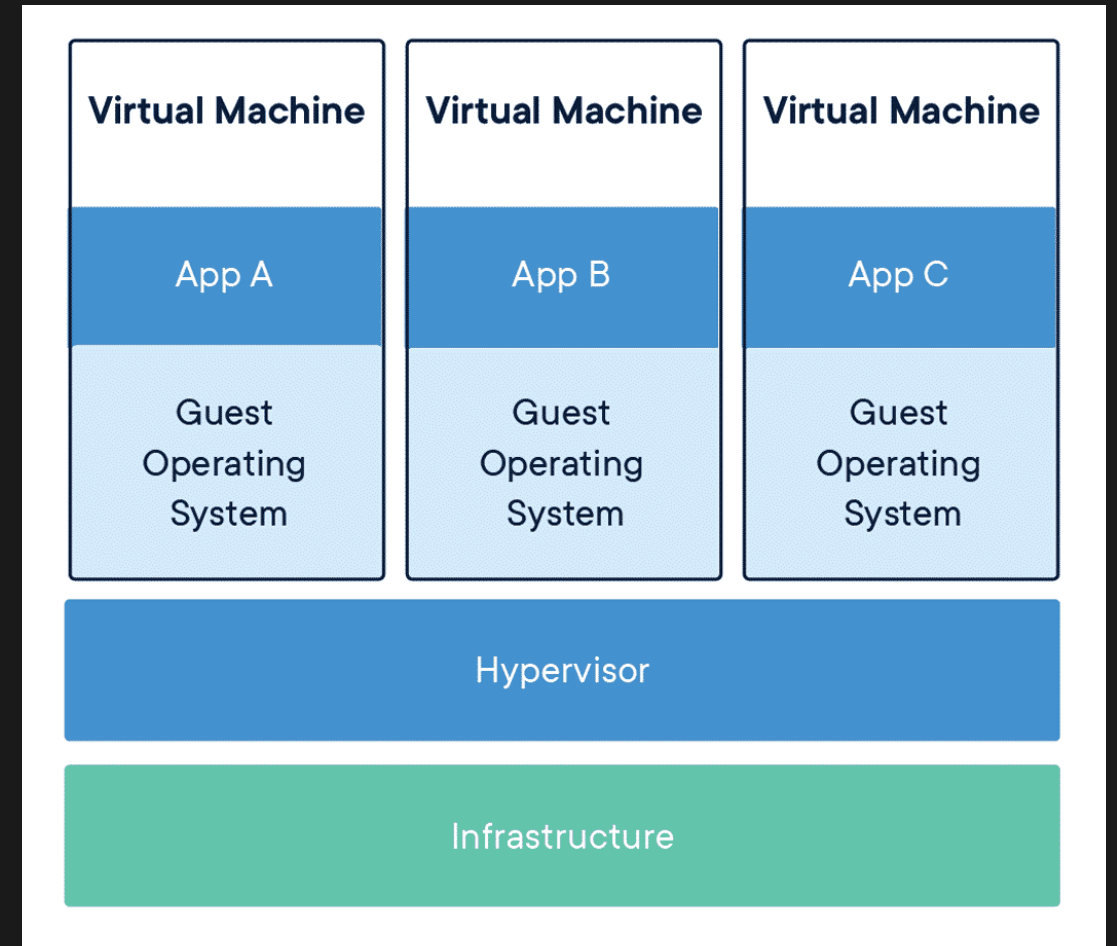
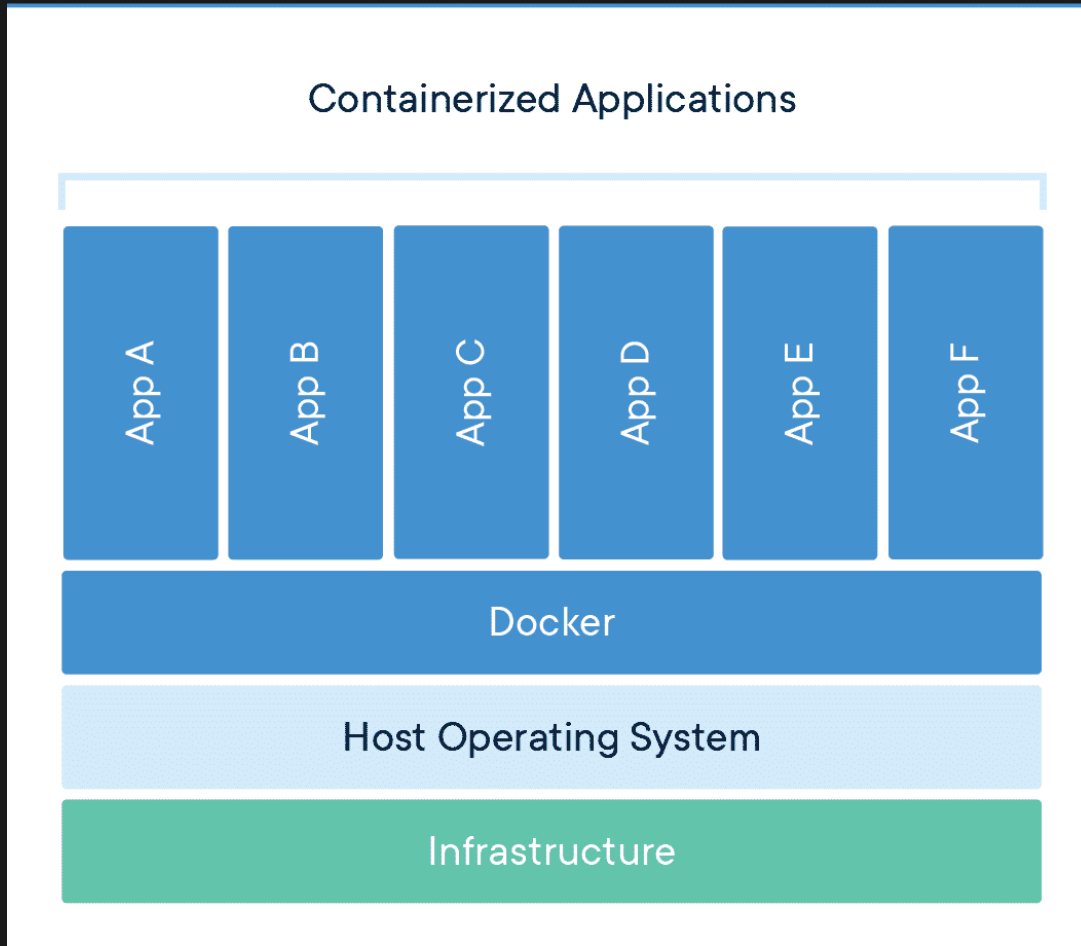


Containerized Apps

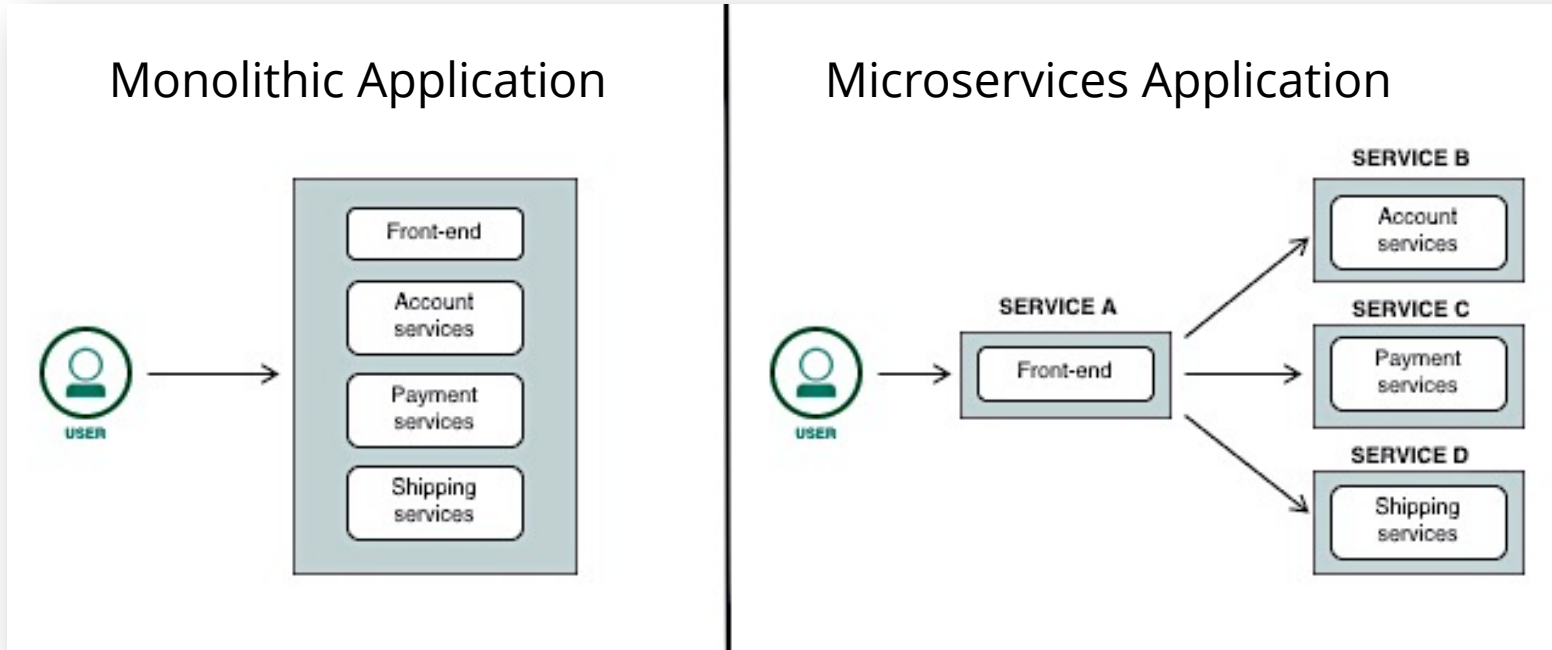


- Isolates s/w from its environment
- Allows easy deployment
- Guarantees consistency
- Lightweight, standalone executable package
- Bundles app and its dependencies (code, tools, libraries, configuration files)

CONTAINERS VS. VIRTUAL MACHINES



MICROSERVICES: A BETTER WAY TO BUILD S/W



- Flexible and efficient
- Independently deployable
- Independently scalable
- Greater resiliency

Containers and microservices the preferred approach to make applications cloud native.





SOFTGear



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SOFTGEAR TECHNOLOGY

- Software media processing built on scalable microservices
- Containerized applications
- On-premise or cloud deployment
- Flexibility to meet the rapidly changing needs of broadcasters











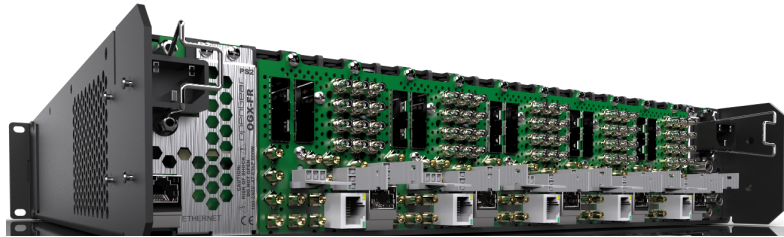




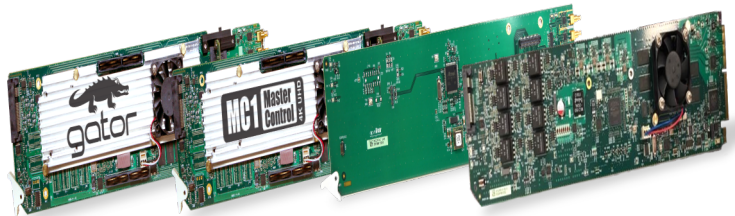
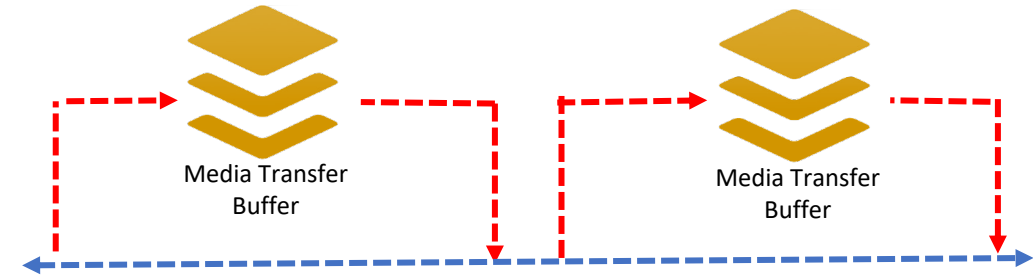
THE EVOLUTION OF MEDIA PROCESSING INSPIRED BY OPENGEAR



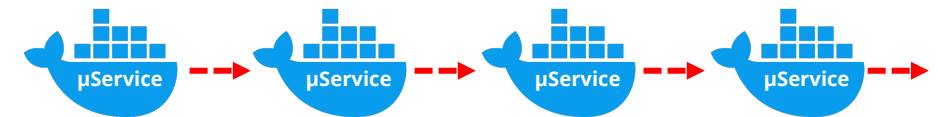
Hardware Environment



Internal Communication



Best of Breed Processing

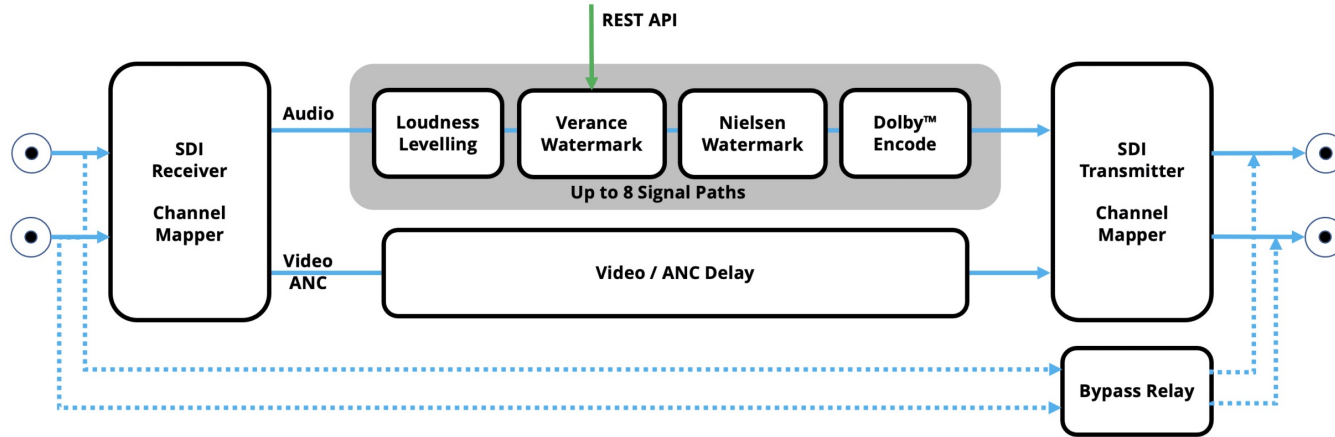


Manage, Control and Monitor

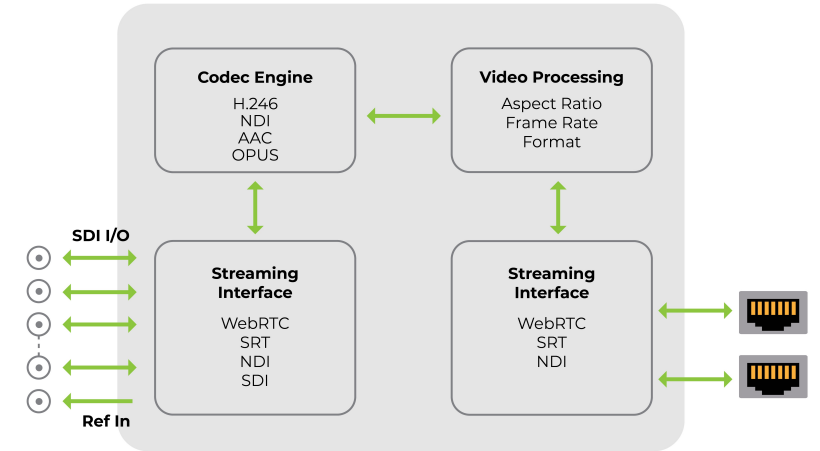


EXAMPLES: MEDIA PROCESSING FLEXIBILITY

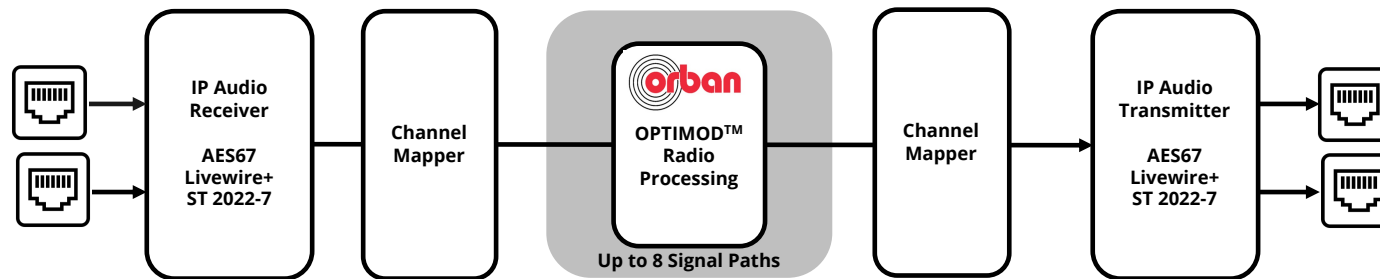
- Containerized apps allow you to quickly react to new requirements & workflows



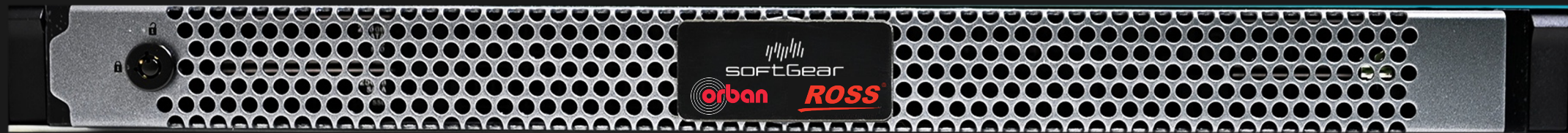
Broadcast Audio Processor



Software Streaming Gateway



Radio and Streaming Audio Processor



RSAP | Radio and Streaming Audio Processor

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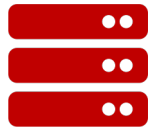


Slow, hard and expensive to scale



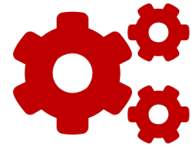
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HOW RSAP SOLVES THESE CHALLENGES?



Microservices Architecture

Simple Deployment via Portable SW Containers
Easy Scaling & Migration
Ultimate Flexibility



Containerized Processing

Ross, Orban, 3rd Party Apps
World-class Signal Processing



Centralized Management

Easily configured and managed via intuitive unified control environment



Rapid Evolution

Fast Development
Quickly Address New Media Applications



High Density Media Processing

More Revenue-generating Programming in Less Rack Space



On-Premise Workflow Appliance

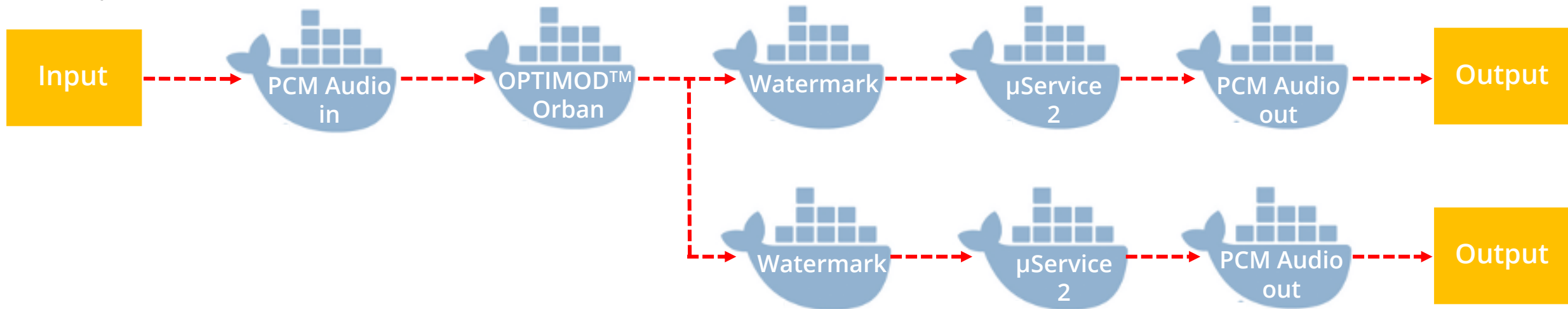
Not ready for the Cloud?
Easy to Deploy On-Prem
Migrate to Cloud

ENABLING WORKFLOW FLEXIBILITY

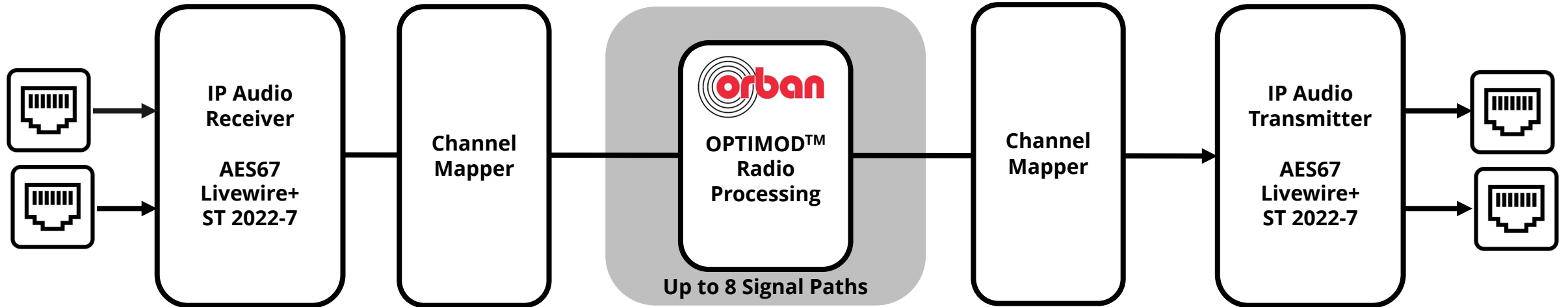
Orban OPTIMOD™ with Watermark Encoder and Additional Processing



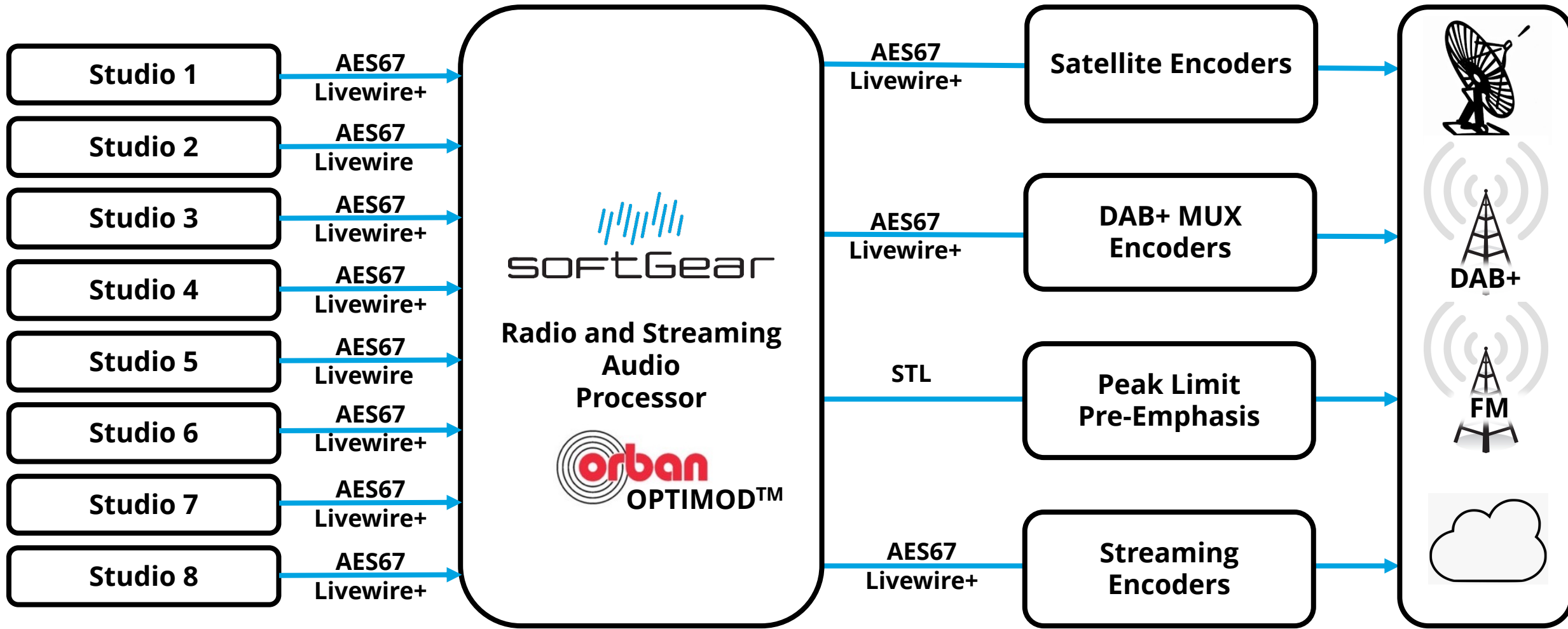
Output Streams can be sent to new Chains



SOFTGEAR™ RSAP ARCHITECTURE

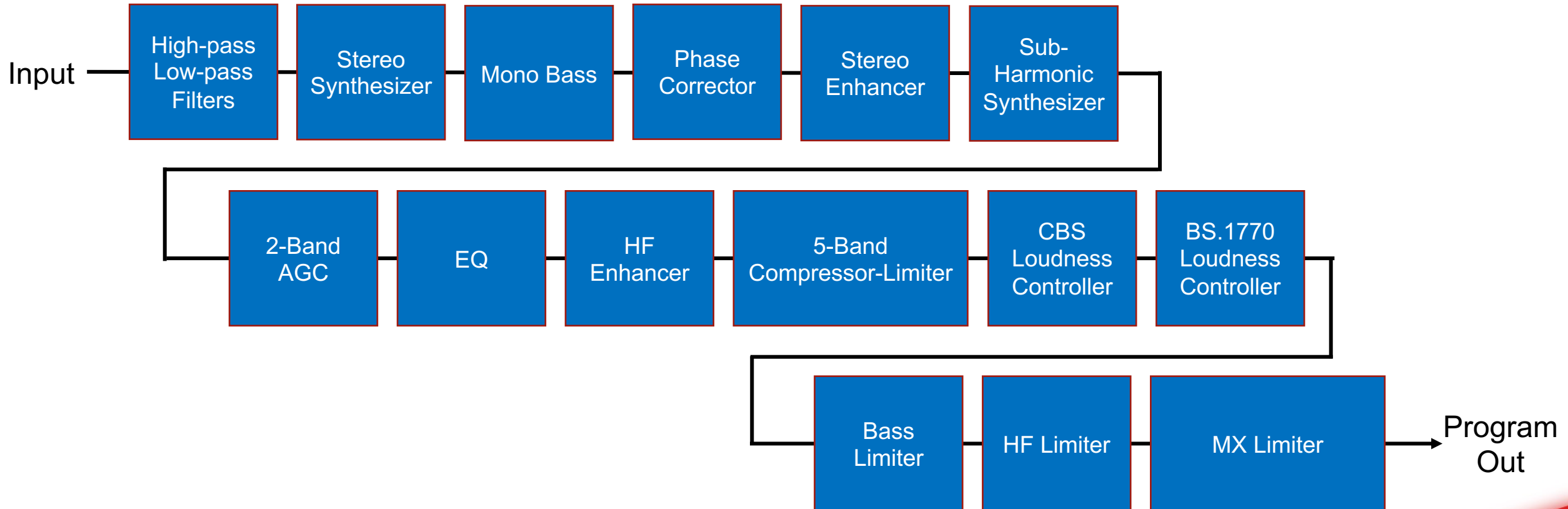


SOFTGEAR™ RSAP: HIGH DENSITY PROCESSING



ORBAN PROCESSING BLOCK DIAGRAM

Simplified – Equivalent to OPTIMOD™ 8700



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REAL WORLD EXAMPLE: RSAP CASE STUDY

Customer Challenge

- Hundreds of audio processors scattered across many sites
- Difficult to access, manage or change easily
- Need to dispatch a technician to the relevant transmitter site
- Would like to migrate to the cloud in the future



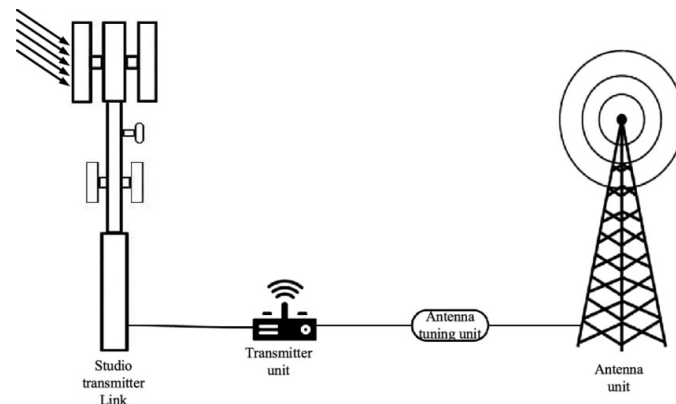
Key Requirements

- Hot-standby and fault tolerant redundancy
- InfoSec precluded use of Microsoft Windows solution



THE PROPOSAL

- Leverage RSAP in a central studio for audio processing
- Meets all the customer's needs for flexibility, agility, scale while making maintenance much easier
- Audio processing is done in the studio (now) or the cloud (future)
- Solution required for “last mile” challenge at the transmitter site where bandwidth to the transmitter is reduced



THE LAST MILE CHALLENGE

Adequate Bandwidth- Lossless Audio

- Fiber
- 5G
- Satellite (StarLink)
- Microwave to a point of presence (POP)
- Combinations of the above for improved reliability

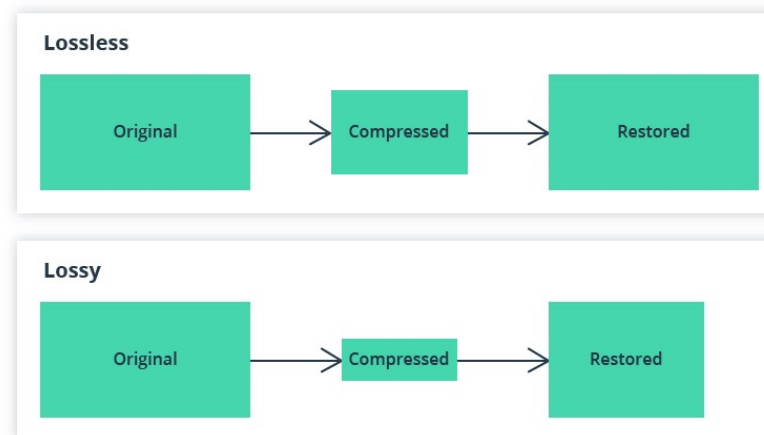
Reduced Bandwidth- Lossy Compressed Composite

- μ MPX
- APTmpx
- Possible to get down to 500 kbps or lower
- Audio is going to be impacted
- Nielsen PPM encoding may be impacted



LOSSY COMPRESSED AUDIO

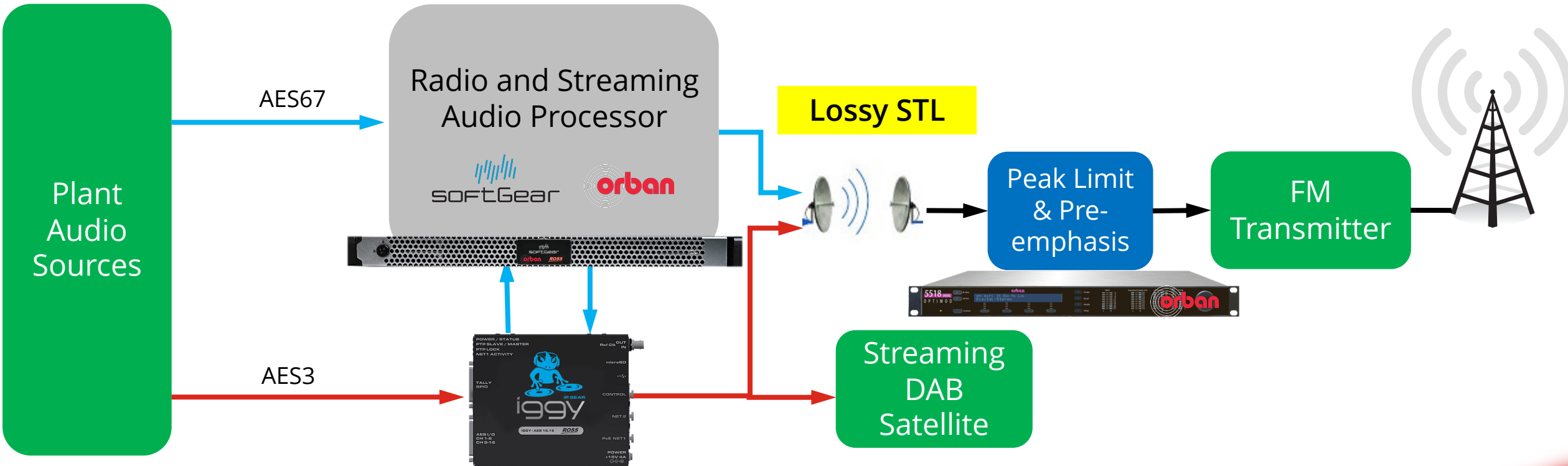
- Processing audio in the cloud or in the studio you may need a transmission codec
- Most codecs do not play well with 75 μ s pre-emphasis
- You will end up with peak control issues
- Will need to be corrected at the transmitter site
- Then you must turn that into something that can drive a transmitter



REDUCED BANDWIDTH: LEVERAGE EXISTING EQUIPMENT AT TRANSMITTER

Studios / NOC

Transmitter Sites



SOFTGEAR™ RSAP CUSTOMER CASE STUDY

Solution

- Centralize audio processing in one location
- Leverage existing Orban equipment at each transmitter site
- Cost-effective redundancy
- Roadmap Bonus: Path to cloud deployment

- ✓ Easy to Access and Manage
- ✓ Intuitive Control
- ✓ 2022-7 Hitless Redundancy
- ✓ Flexible and Scalable
- ✓ Cloud Ready



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Thank You!



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