

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

WISCONSIN BROADCASTERS CLNIC  
September 2021



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# AGENDA

- Media Challenges We Are Addressing
- A Bit About Ross, Orban and Our Partnership
- What is SoftGear™ Technology
- Radio and Internet Streaming Audio Processor



Servus TV (Red Bull Media House) Control Room, Salzburg, Austria



# 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

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



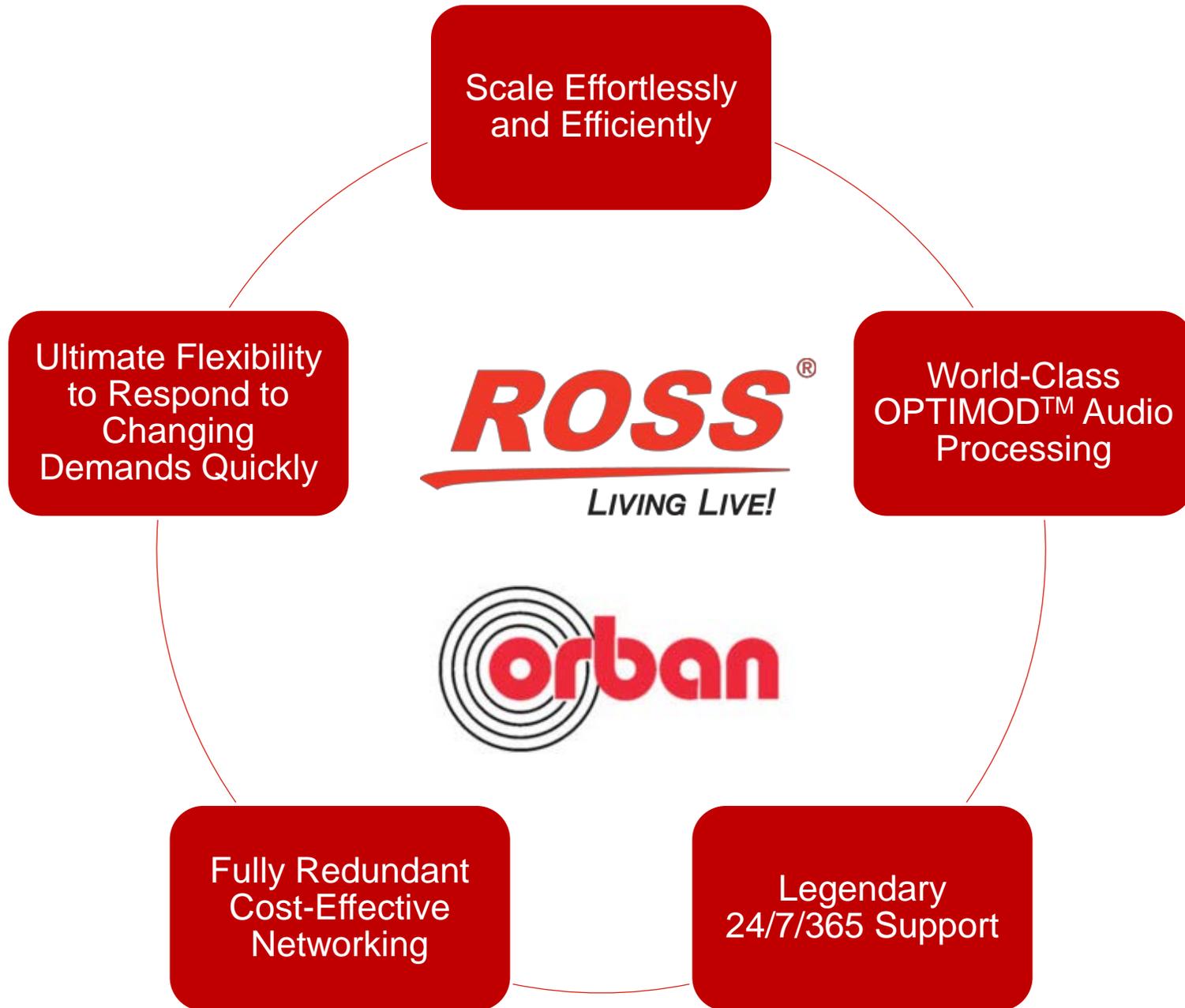
Slow, hard and expensive to scale



Cloud is scary: new tools, skills, management



# OUR PARTNERSHIP



*Help broadcasters navigate the rapidly changing media landscape easily and cost effectively by offering solutions unparalleled in the industry.*

# A PASSION FOR LIVE PRODUCTION

- Ross creates technology, solutions and services for the live production industry
- Ross has a unique position in the industry thanks to our focus, and the breadth and depth of our portfolio
- Ross solutions enable customers to develop *High Impact, High Efficiency* live productions

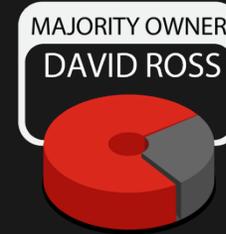


Ross, Technology deployed in the LED Control Room for 86<sup>th</sup> edition of the NFL Draft

# THIS IS WHO WE ARE



Privately Owned,  
Founded in 1974



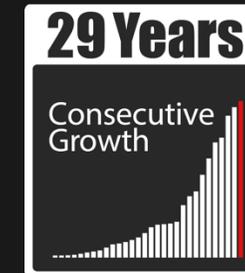
Majority Owned  
by David Ross



>200 employee  
shareholders



Self Funded, &  
Debt Free



Revenue Keeps on  
Growing; ~15%  
CAGR

David Ross, President and CEO

# THIS IS WHO WE ARE

DOING BUSINESS IN



**100+**  
COUNTRIES EVERY YEAR

**\$ TOP**  
Rated\*

- Value For Money
- Great Customer Service



**15**  
GLOBAL  
OFFICE  
LOCATIONS

Ottawa  
Iroquois  
London - Reading  
London - White City  
Singapore  
Virginia  
Kanata  
Sunnyvale  
Sydney  
Fort Lauderdale  
Beijing  
Melbourne  
Salt Lake City  
Connecticut  
Toronto

**LIVE PRODUCTION**  
Technology & Services

**1000+**  
EMPLOYEES



**ROCKET SURGERY**  
ROSS CREATIVE & PROFESSIONAL SERVICES  
**100+** CUSTOMER  
PROJECTS  
A YEAR

Top 3 Ross Video Word Associations\*

**Innovative Leader Reliable**

\*Source: Devoncroft Big Broadcast Survey

**9** VERTICAL MARKETS



ACQUISITIONS IN 11 YEARS

**17**

- 1) Media Refinery - Graphics
- 2) Norpak - Data and Ratings Insertion
- 3) Codan Broadcast - Routers
- 4) FX Motion - Robotic Cameras
- 5) Cambotics - Robotic Cameras
- 6) Montalto - Routers
- 7) MCP - Mobile Production Services
- 8) ADS - News Room Computers
- 9) Unreel - Virtual Set Technology
- 10) Rocket Surgery - Creative Services
- 11) Coveloz - IP Technology
- 12) Abekas - Video Servers & Replay
- 13) Portalis - Workstation Integrator
- 14) Piero - Sports Graphics Analysis
- 15) Coiron - XPression Applications
- 16) Image Video - Tally Control Platform
- 17) Primestream - Asset Management

PRODUCT & SERVICE CATEGORIES

**26**

Graphics, Camera Robotics, Production Switchers, Signal Processing, Routers, Master Control, Automated Production, Facility Control, Virtual & Augmented Reality, Creative Services, Mobile Production Services, Cameras, Video Servers, Replay Systems, Media Asset Management, News Room Editorial Systems, Social Media Media Technology, LED Video Processors, Studio-In-A-Box, Workstation Integration, Sports Analysis, Tally Systems, Remote Production Cloud

**ROSS** PRODUCTION  
SERVICES

**500+** EVENTS  
A YEAR

**ROSS**  
LIVING LIVE!

# OUR CUSTOMERS AND OUR VERTICAL MARKETS

## Broadcast



## Corporate



## Education



## Worship



## Entertainment



## Government



## Stadiums



## Esports



## MOTION GRAPHICS

**XPRESSION** | Single, Triple, 4K UHD Flex, Prime, Go!, Designer, Developer, Remote Sequencer  
**XPRESSION CLIPS**  
**XPRESSION TESSERA**  
**XPRESSION MAPS 3.1**  
**XPRESSION TELESTRATE**  
**XPRESSION TOUCH FACTORY**  
**XPRESSION BRAND IT**  
**PIERO** | Sports Analysis Graphics  
**PIERO LIVE** | Down and Distance



1RU, 2RU & 4RU

## CREATIVE SERVICES

**ROCKET SURGERY** | Graphics Creation



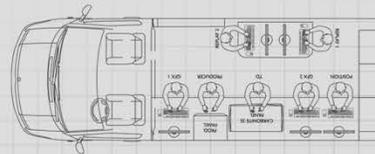
## STUDIO IN A BOX

**GRAPHITE** | All-in-One Live Production Vehicle  
**GRAPHITE PPC** | Portable Production Centre



## OPENTRUCK

**OPENTRUCK** | Flight Case through 40-foot Truck



## PRODUCTION SERVICES

**ROSS PRODUCTION SERVICES**



## MULTI-SCREEN IMAGE PROCESSING

**CARBONITE MOSAIC**



## CAMERAS

**ACID CAMERA** | H200-UCHR, Z50-UCHR  
**PIVOTCAM** | PIVOTCam SE



## ASSET MANAGEMENT & STORAGE

**STREAMLINE** | Standard, Enterprise, Graphics  
**STREAMLINE.CLOUD**  
**STREAMLINE NEWS VIDEO SUITE** | MAM, Storage & Playback for News  
**EVO** | Networked Storage



## CHROMA KEYING

**ULTRACHROME HR**



\* Carbonite Black Chassis with UltraChroma HR Software

# PRODUCTION TECHNOLOGY & SERVICES

## NEWS & SOCIAL MEDIA

**INCEPTION NEWS** | Academic, Express, Standard, Enterprise  
**INCEPTION LIVE**  
**INCEPTION SOCIAL**  
**INCEPTION.CLOUD**  
**HORIZON**



## CONTROL SYSTEMS

**OVERDRIVE** | Express, Prime, Premium  
**DASHBOARD** | Facility Control  
**LIGHTNING** | Assembly Control  
**ULTRITOUCH** | Touch Screen Control  
**POWERPLAY** | Event Control System



## INFRASTRUCTURE

**SIGNAL PROCESSING**

**OPENGEAR** | Modular Signal Processing, QGX Frame  
**SOFTGEAR** | Software Microservice Media Processing Platform  
**MASTER CONTROL** | MCT-UHD Master Control System  
**NIELSEN** | Watermarks Encoder  
**GATOR** | 12G UHD Signal Conversion and Processing  
**RAPTOR** | ST 2110 Gateway  
**GEARLITE** | Point of Use Signal Processing  
**NEWT** | ST 2110 Gateway  
**MASTER SYNC & REFERENCE** | SRG-2200, SRG-4500, ACO-4400  
**AUDIO MONITORING** | MB 651, MB 652



**CONNECTIVITY**

**ULTRIX 12G & IP ROUTER** | 16x - 160x and beyond  
**NK ROUTER** | 16x4 - 72x72  
**ULTRITOUCH** | Touch Screen Control  
**ULTRIMIX-MXR** | Audio Mixer Connectivity  
**ULTRICORE BCS** | Advanced Connectivity System Controller  
**ULTRICORE IP** | IP Controller License for Ultricore BCS  
**ULTRICORE TLX** | Tie-Line Manager license for Ultricore-BCS  
**PRO-XI** | Workstation Integrator  
**TSI 4000** | Next Generation Tally Control System

## IP TECHNOLOGY

**IP GATEWAYS** | ST 2110 and AES67: Iggy, Newt, Raptor  
**SOFTWARE DEFINED PROCESSING** | softGear Microservice Processing Platform

**OEM PRODUCTS** | BACH ST-2110 / AES67 OEM Modules and SoCs.



## VIDEO SERVERS, REPLAY & DELAY

**MIRA+** | Enhanced Replay System  
**TRIA+** | Enhanced Production Server  
**TRIA+ UHD** | Enhanced Production Server  
**TRIA NEWS** | News Clip Server

**MIRA EXPRESS** | Replay System  
**TRIA EXPRESS DUET** | Video Clip Server  
**AIRCLEANER** | Live Events Delay  
**KIVA** | Studio Live



## PRODUCTION SWITCHERS

**ACUTY**

**ACUTY PANEL** | A1s, A2m, A2x, A3m, A3, A4  
**ACU-4, ACU-8** | SDI, SD/HD/UHD  
**ULTRIX ACUTY** | SDI/HP/HYBRID, HD/UHD

**CARBONITE**

**TOUCHDRIVE** | TD1C, TD1, TD2, TD2S, TD3S  
**CARBONITE BLACK SOLO**  
**CARBONITE BLACK SOLO 13**  
**CARBONITE BLACK PLUS**  
**CARBONITE BLACK PLUS 12G**  
**CARBONITE ULTRA**



\*Integrated RAVE audio mixer option

## ROBOTICS

**FURIO SKYDOLLY** | Ceiling-Mounted Furio Dolly, S2 Inverted Lift  
**FURIO LIVE** | Live Head, SE Dolly and SE Lift; PanBar and Joystick Controls  
**FURIO STUDIO** | VR100, VR600 Heads; SE & S2 Lifts; SE BlackBird  
**CAMBOT** | 520PT, 600PT, 700PT Heads; 600 BlackBird; 600XY & 700XY Free-Roaming Peds  
**VR0** | Manual Fluid Head with Tracking  
**SMARTSHELL** | Robotic Camera Control System, CamBot Motion Director



## VIRTUAL & AUGMENTED REALITY

**TRACKLESS VIRTUAL LUCID STUDIO** | Control System & Workflow  
**VOYAGER** | EPIC Unreal Engine 4 ARVS Renderer



**ROSS**  
LIVING LIVE!

# Who is Orban?

- Founded 45 years ago by Robert Orban who is still at his bench
- State-of-the-art audio processing for live performances, content creators, radio, TV and Internet broadcasters
- US and Germany production
- Powering over 14,800 broadcasts and live events every year



# We Are Audio Processing

- Loudness + Dynamic Range Measurement and Control
- Stereo and Multi-channel Surround Technologies
- Broadcast, Consumer and Content Creation Applications





**Delighting Over  
One Billion Ears  
Every Day**



# softGear

## The softGear™ Platform



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# THE SOFTGEAR™ PLATFORM



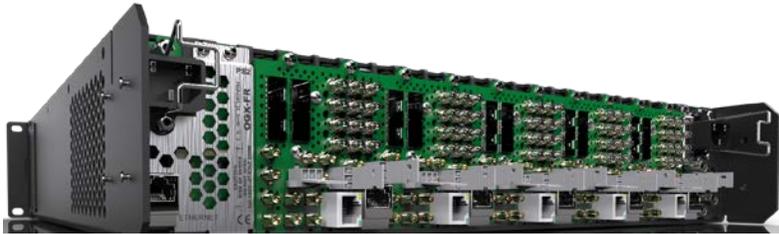
softGear enables flexibility to meet the rapidly changing needs of today's broadcasters, providing software media processing built on a scalable microservices platform ideal for on-premise or cloud deployment



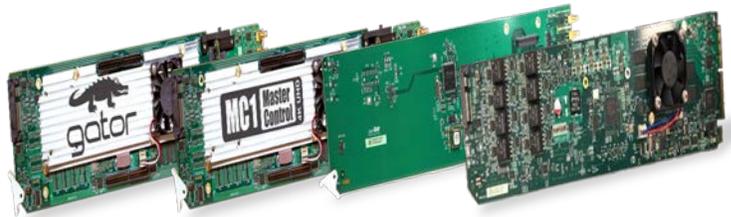
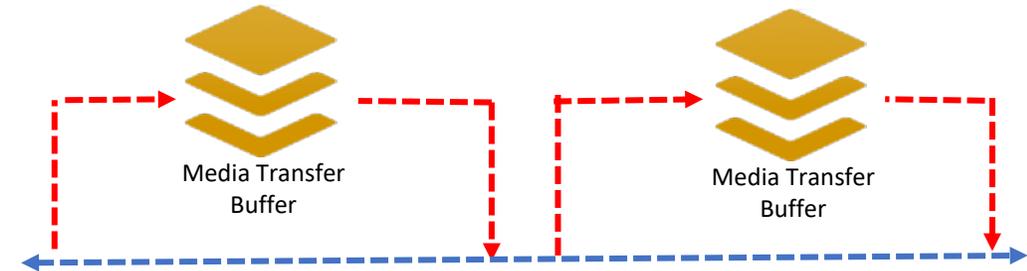
# THE EVOLUTION OF MEDIA PROCESSING INSPIRED BY OPENGear



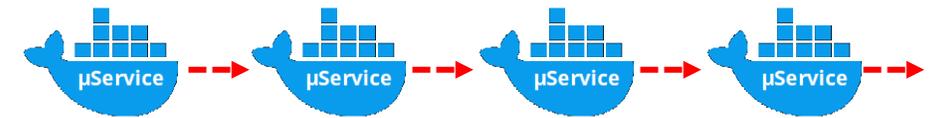
Hardware Environment



Internal Communication



Best of Breed Processing



Manage, Control and Monitor





# SOFTGear



## RSAP | Radio and Streaming Audio Processor

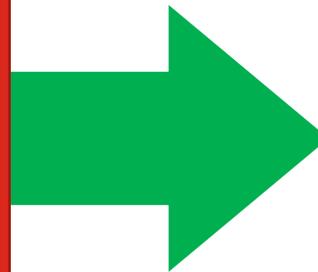


# THE ORIGINS OF A POWERFUL SOLUTION



- Microservices Platform
- Containerized Applications
- High Channel Density
- Advanced Networking
- Built-In Reliability

- World-Class OPTIMOD™ Processing
- MX-Limiter
- Multi-Band Processing
- Hand-Crafted Presets



## RSAP | RADIO AND STREAMING AUDIO PROCESSOR

- Easy Migration & Redundancy
- Easy Deployment & Scaling
- Easy on the Budget
- Easy to take to the Cloud
- Easy to Configure and Manage

ULTIMATE FLEXIBILITY  
BUILT-IN RELIABILITY  
ONE POWERFUL SOLUTION



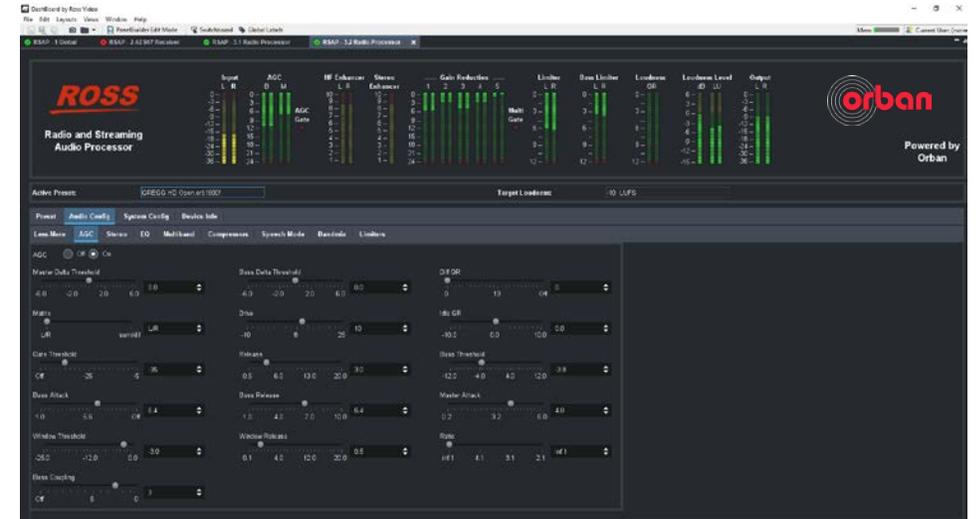


**HiGH** **IMPACT**  
**EFFICIENCY**

Easily scales in cost effective manner on off-the-shelf hardware  
Uses DashBoard, making it simple to deploy and control applications

# SOFTGear **RSAP RADIO AND STREAMING AUDIO PROCESSOR**

- Centralized multi-channel audio processor
- Scalable microservice-based platform
- World-class Orban OPTIMOD™ radio processing
  - FM/ DAB+/ HD Radio/ Streaming
- Industry's most consistent sound, track-to-track & source-to-source
- Create and lock-in your own unique sonic brand
- Easily configured and managed via DashBoard



**DashBoard**

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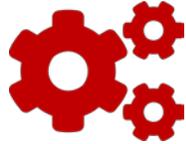


# HOW RSAP SOLVES THESE CHALLENGES?



Microservices  
Architecture

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



Best of Breed  
Processing

Ross, Orban, 3<sup>rd</sup> 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

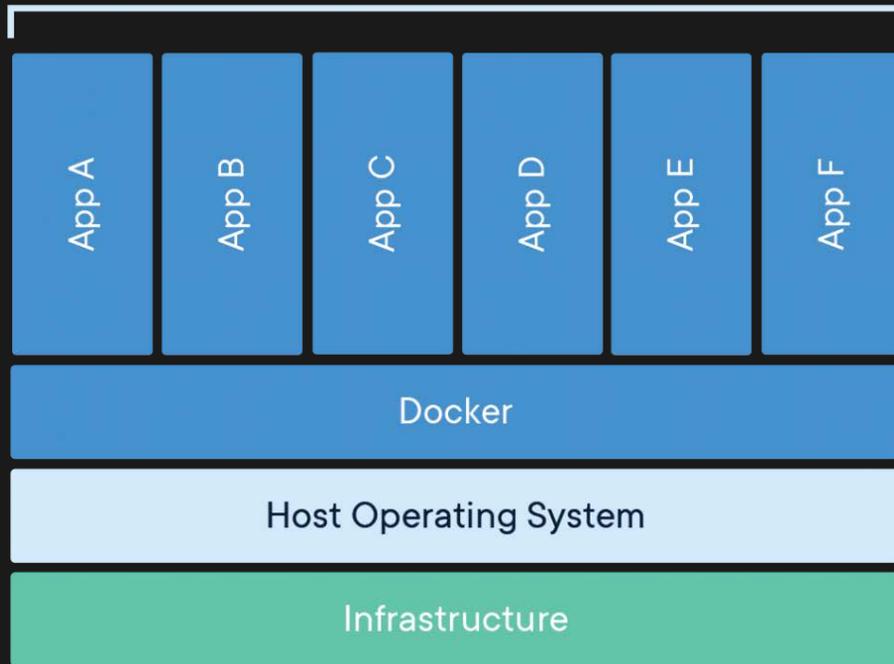
Not ready for the Cloud?  
Easy to Deploy On-Prem  
Migrate to Cloud



# PORTABILITY VIA CONTAINERS



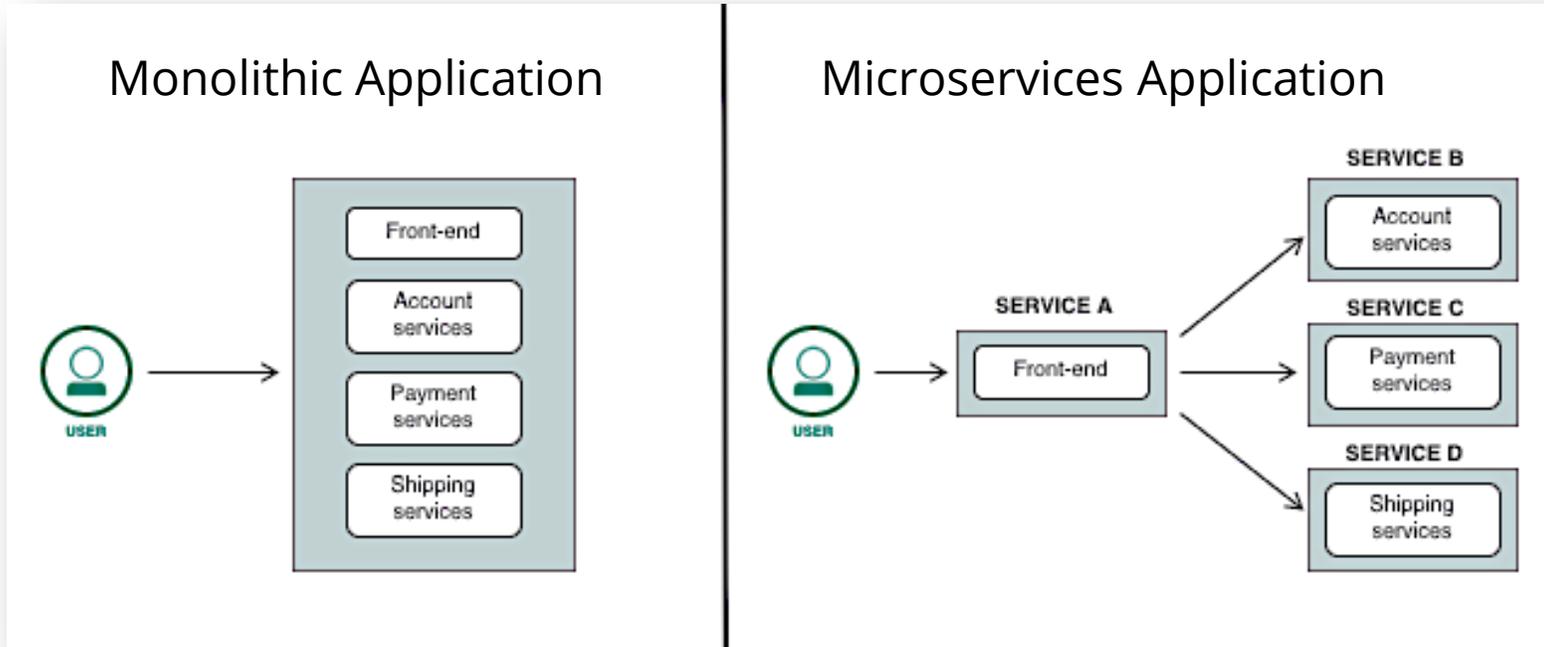
Containerized Apps



- 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)



# MICROSERVICES: A BETTER WAY TO BUILD SOFTWARE



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

Containers and microservices the preferred approach to make applications

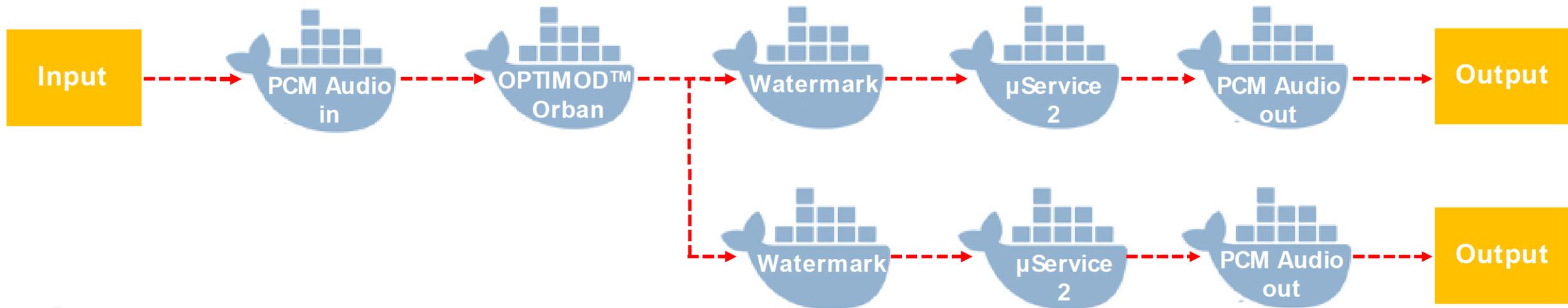


# ENABLING WORKFLOW FLEXIBILITY

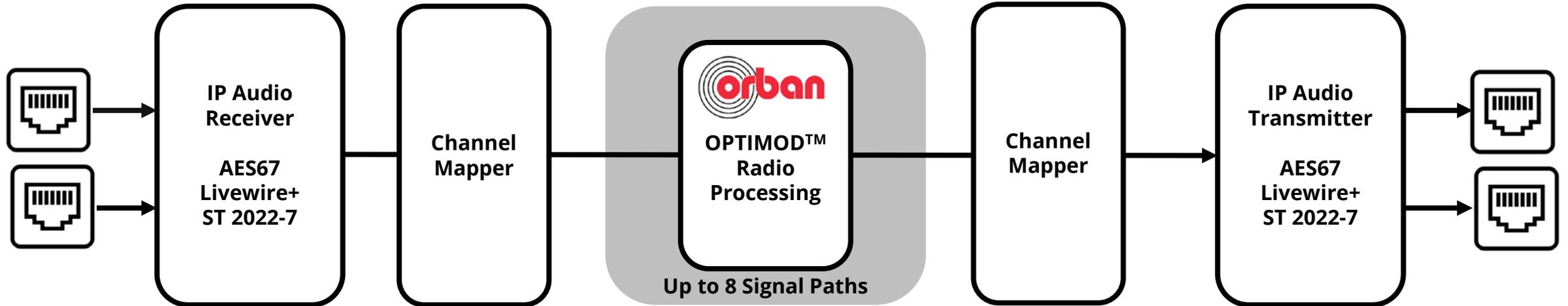
## Orban OPTIMOD™ with Watermark Encoder and Additional Processing



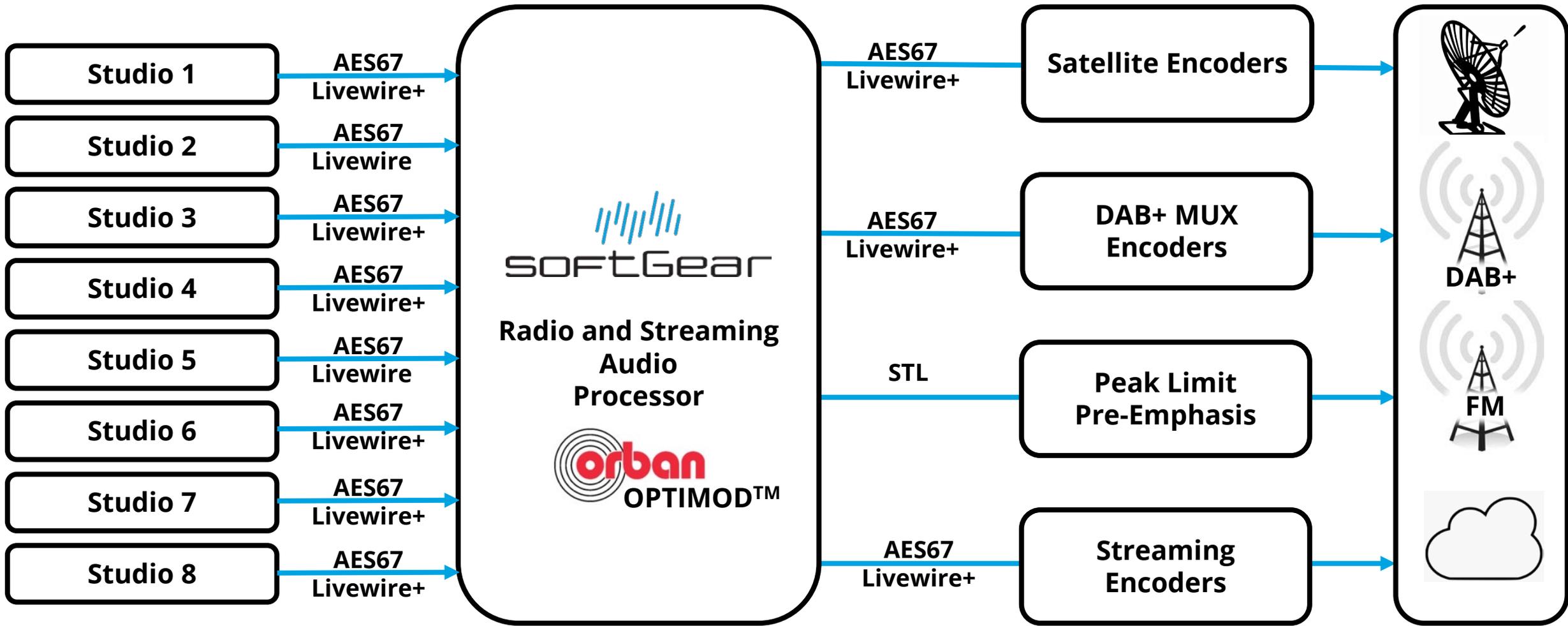
## Output Streams can be sent to new Chains



# SOFTGEAR™ RSAP ARCHITECTURE

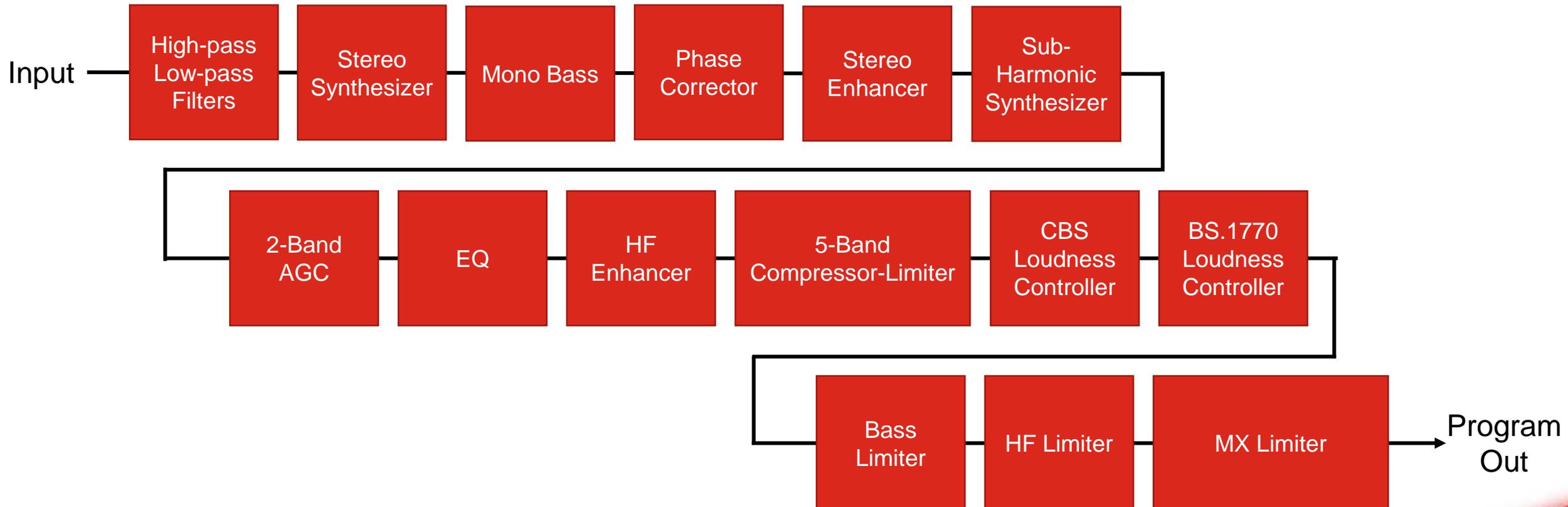


# SOFTGEAR™ RSAP: HIGH DENSITY PROCESSING



# ORBAN PROCESSING BLOCK DIAGRAM

Simplified – Equivalent to OPTIMOD™ 8700



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# REAL WORLD EXAMPLE: RSAP LAUNCH CUSTOMER



## Customer Challenge

- Hundreds of Orban processors scattered across many sites
- Difficult to access, manage or change easily
- Need to dispatch a technician to the relevant transmitter site



## Key Requirements

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



# SOFTGEAR™ RSAP LAUNCH CUSTOMER



## 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
- ✓ DashBoard Intuitive Control
- ✓ 2022-7 Hitless Redundancy
- ✓ Scalable
- ✓ Legendary Support



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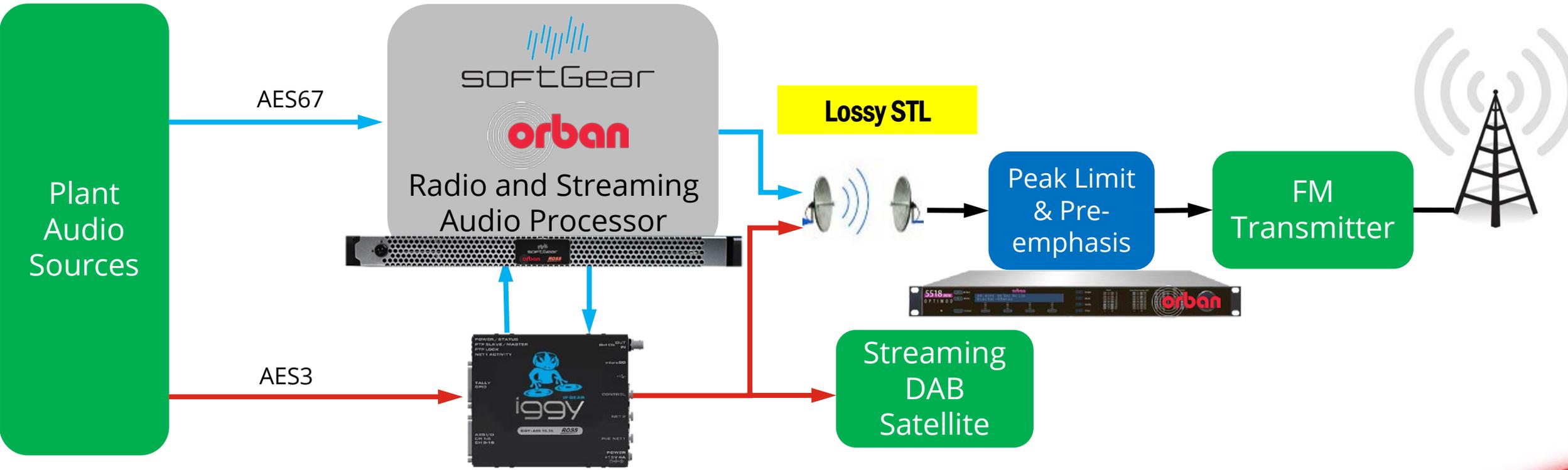


# RADIO AND STREAMING AUDIO PROCESSOR



Studios / NOC

Transmitter Sites



# RSAP-OPTICLOUD: ON-THE-AIR NOW!



# Orban and Ross Thank You!



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