



Award-winning Live and VOD over-the-top Television Service

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# ARRIS SECUREMEDIA<sup>®</sup>

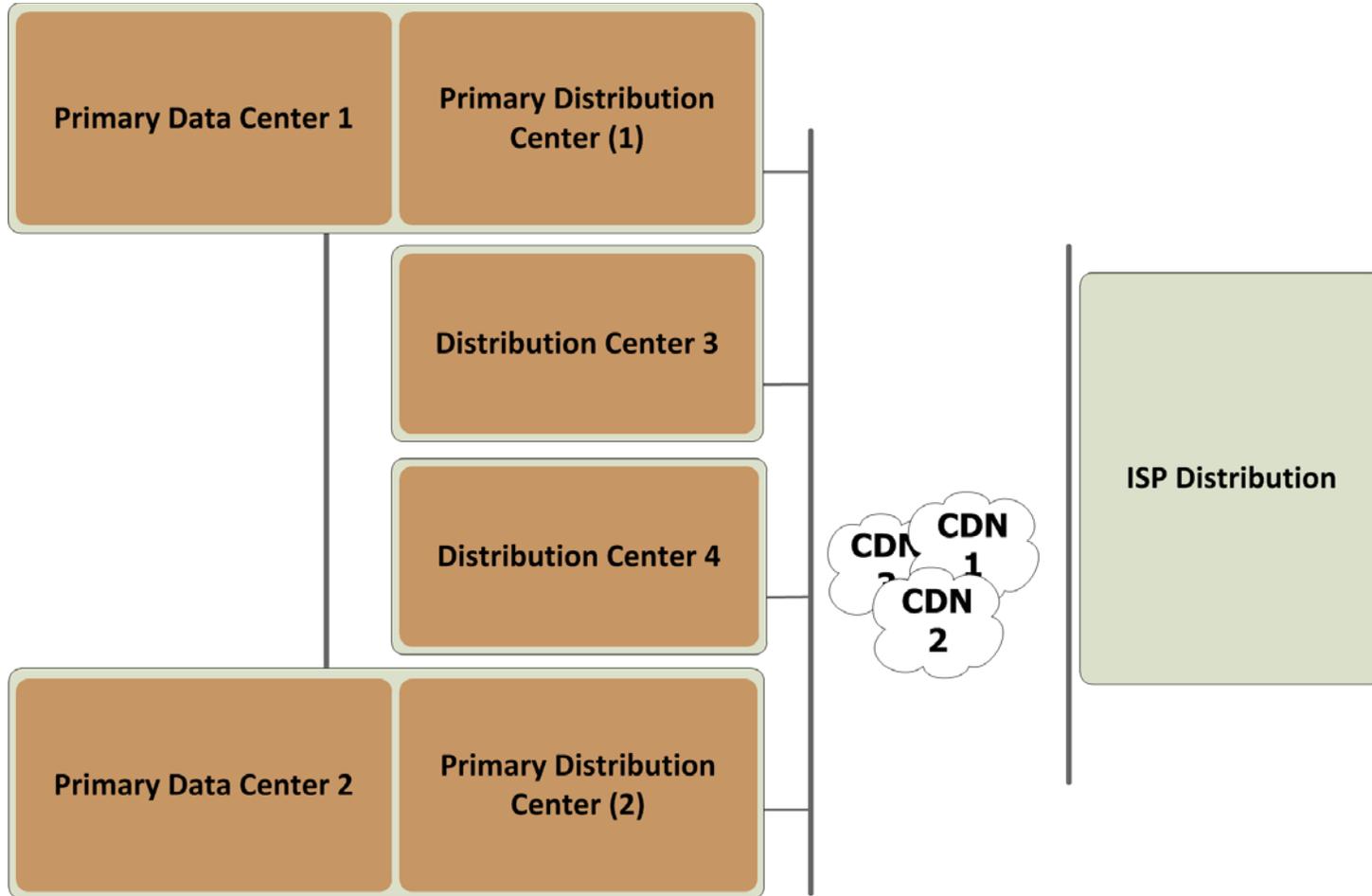
The icon is a circular orange border containing several white icons: a smartphone, a laptop, a desktop monitor, and a server tower, representing various digital devices and infrastructure.

Award-winning advanced Content Security Solutions

# SLING TV

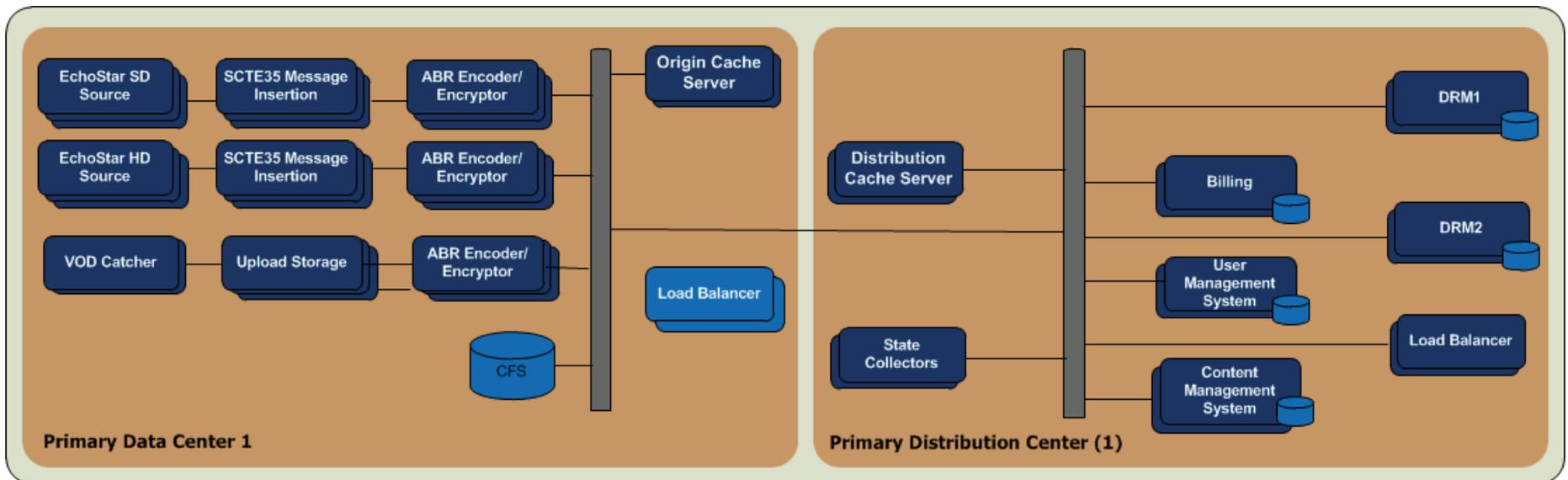


## Headend and Managed Distribution Network Overview



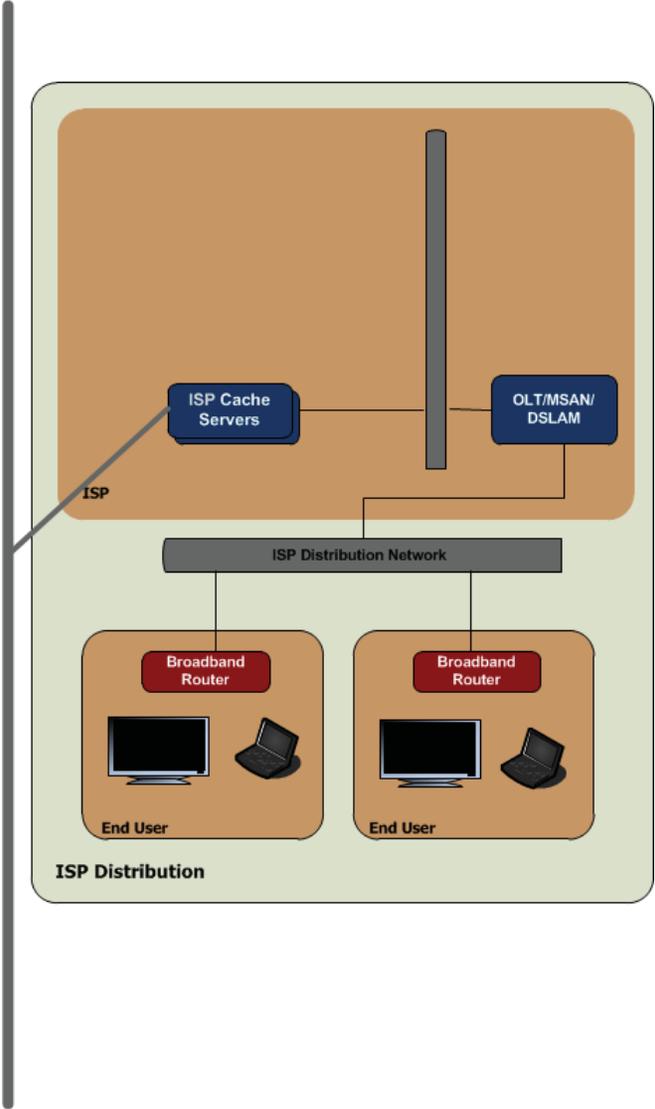
# SLING TV

## Data and Distribution Center Details



# SLING TV

## ISP Distribution Components



# ARRIS SECUREMEDIA®



## Industry Leader Protecting High Value Content

- ARRIS SECUREMEDIA® Encryptonite ONE™ System protects high value content from every Hollywood studio & major broadcaster



- Deployed around the world in IPTV, Internet TV, digital terrestrial, hospitality
- 15 years of deployment history
- Merdan audited multiple times to the satisfaction of studios and networks

# ARRIS SECUREMEDIA®

## Historical Background



### Pioneer in software-based CA/DRM for IP content delivery

- Founded in 1996
- First to advocate software-based security to Hollywood studios & broadcasters
- Original DRM system for RealNetworks
- Original DRM system for Move Networks Video Service

### Acquired by Motorola (now ARRIS) in January, 2010

- ARRIS is a leader in CAS - MediaCipher
- ARRIS is a leader in PKI infrastructure – over two billion keys

# ARRIS SECUREMEDIA® ENCRYPTONITE ONE™ SYSTEM



All-software, open platform CA/DRM system featuring:

- Content Encryption for Broadcast and VOD content
- Device Registration
- Device Authentication & Clone Detection
- Secure Offline Playback
- Platform dependent robustness:
  - Hardware Root of Trust
  - iDetect™ Tamper Detection
  - White-box Cryptography
  - Obfuscation
  - Root/Jailbreak Detection



# ARRIS SECUREMEDIA®



## Security requirements for content on Set Top Box

- Secure device boot (hardware root of trust)
- SoC unique keys
- Protected DRAM
- HDCP output protection
- Signed code
- DRM client embedded in client platform code
- MovieLabs recommendations for enhanced video
  - Watermarking for 4K content
  - Cinavia mark detection
  - Side-channel attack mitigation



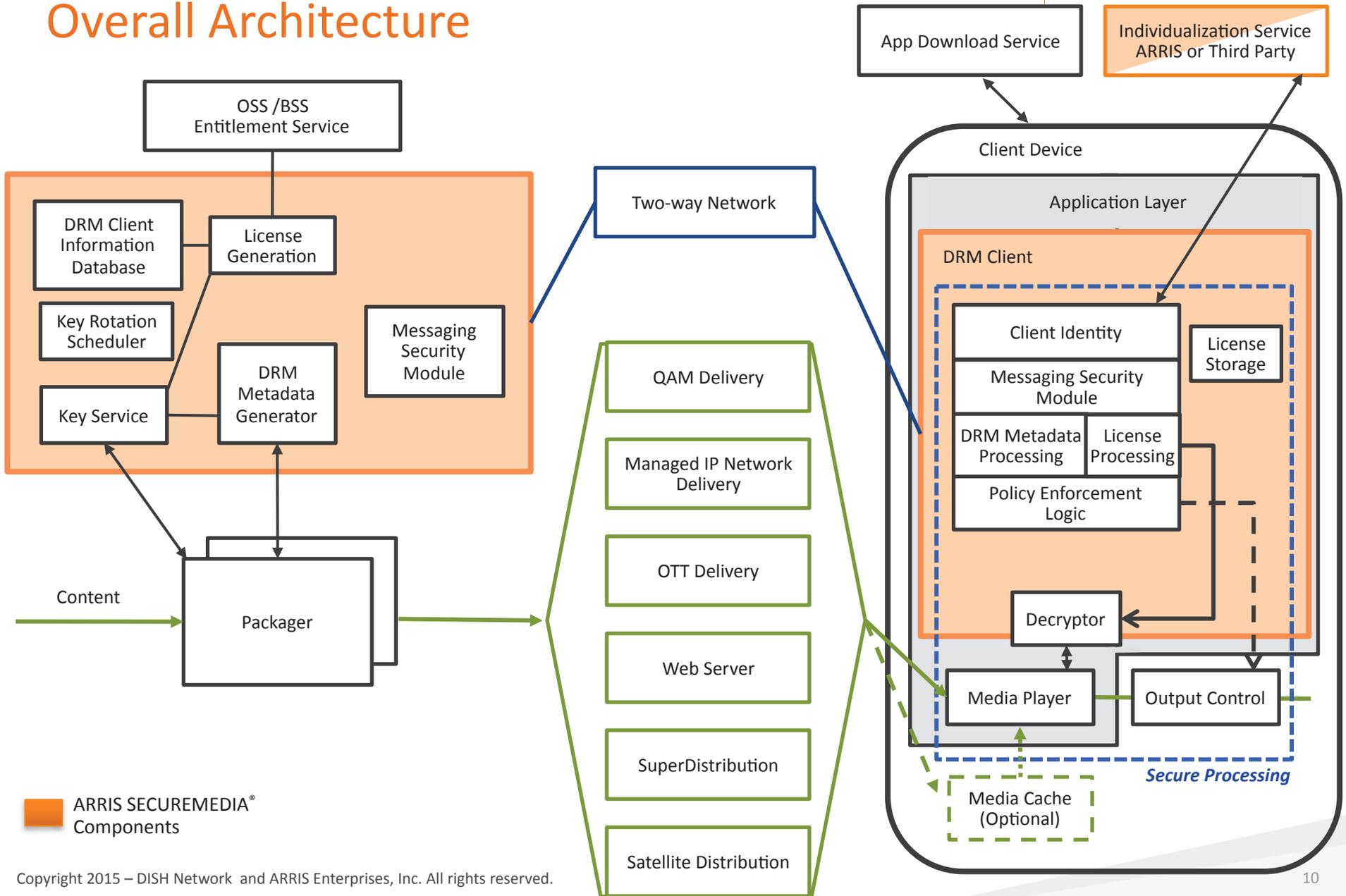
# ARRIS SECUREMEDIA®

## HD Class Mobile Security



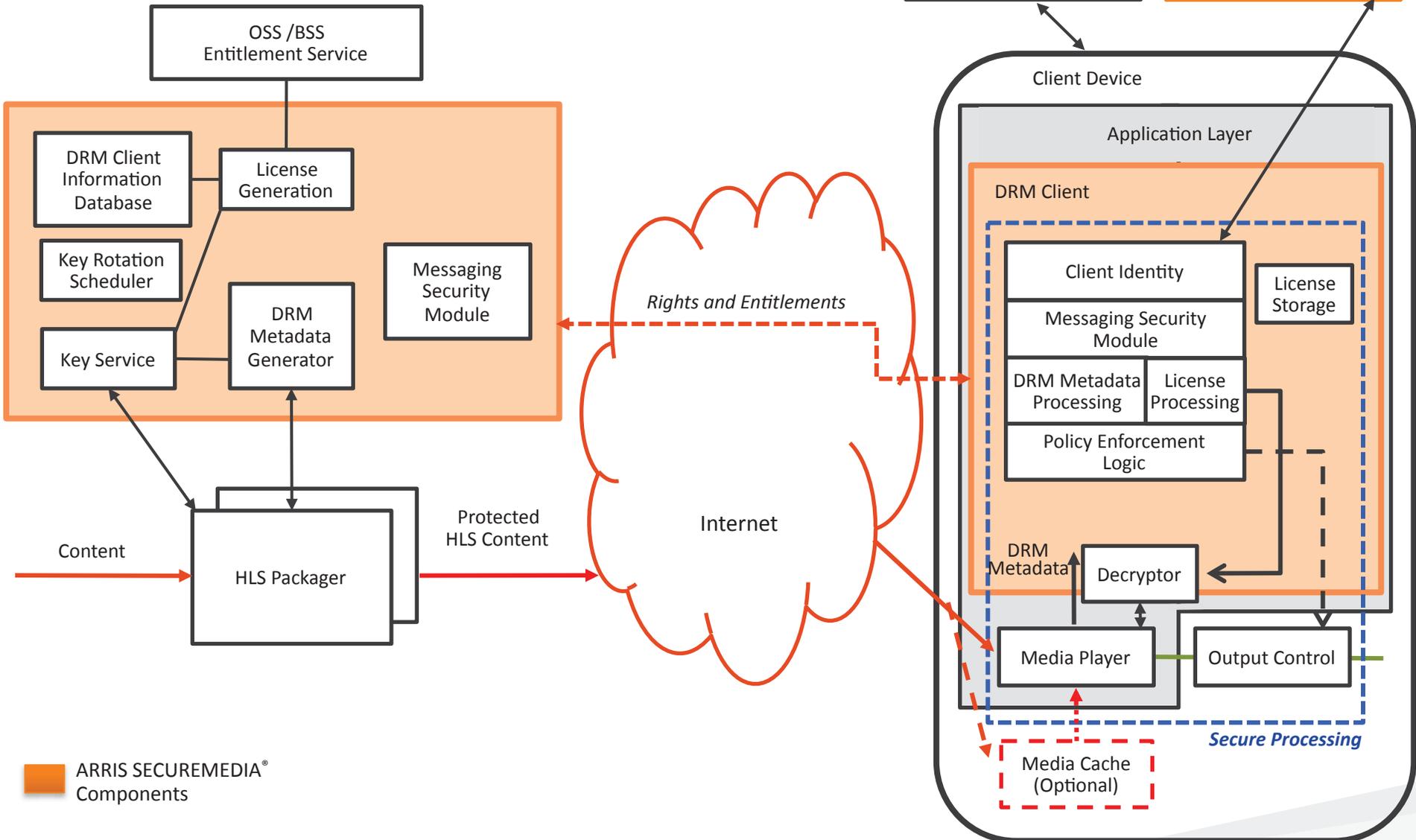
- ARM® TrustZone® Implementation
  - Provides execution environment for trusted applications “TEE”
  - Vast majority of tablets and mobile devices
  - Isolate (smaller) secure portion of any solution from the richer Android application domain, including keys and crypto
  - Also requires internal chip support for a “protected video path” – clear video flow in protected DRAM
  - Robust protection against rooting
- GlobalPlatform®
  - Developed standardized interfaces for use of the TrustZone
  - Certification programs

# ARRIS SECUREMEDIA® Overall Architecture



# ARRIS SECUREMEDIA®

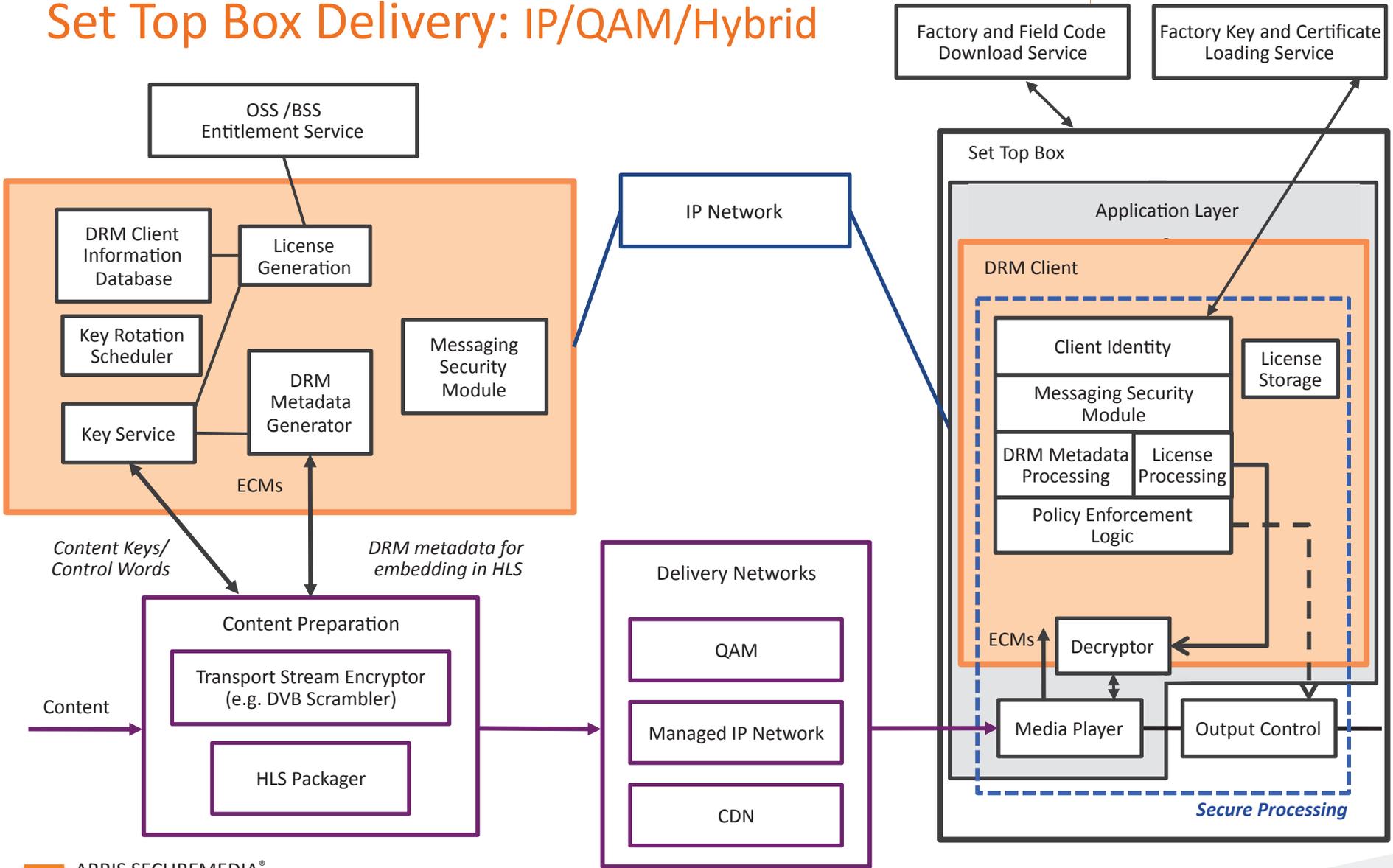
## Multi-screen Delivery: Android™



ARRIS SECUREMEDIA® Components

# ARRIS SECUREMEDIA®

## Set Top Box Delivery: IP/QAM/Hybrid



ARRIS SECUREMEDIA® Components

# ARRIS SECUREMEDIA®

## Downloadable Security for DSTAC

- Protect highest valued content
- Attributes:
  - Hardware root of trust
  - Secure boot
  - Signed platform code
  - Trusted execution
  - Protected video path
  - Diverse clients suggest diverse download methods



Thank you.