
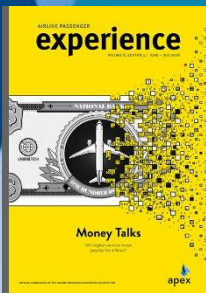


# The Inflight Entertainment Market ... in search of a shared ecosystem

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Chair, APEX Technology Committee



Industry journalist writing  
regularly for publications  
like these.



**Lufthansa Systems**



**apex**  
airline passenger  
experience association



# The Inflight Entertainment Market: IFE



Lufthansa Systems, with offices in Germany and 16 other countries, provides digital platforms serving connectivity and wireless inflight entertainment (IFE) simultaneously ... an onboard datacenter.





## The Inflight Entertainment Market: IFE

- The Airline Passenger Experience Association (APEX) is the only non-profit membership trade organization comprised of the world's leading airlines, industry suppliers, major media groups and related aviation industry leaders.
- Dedicated to elevating the passenger experience for more than 80% of global passengers, while driving industry initiatives and desired regulations.
- We have more than 400 members including about 100 of the world's airlines.
- The APEX Technology Committee adopts standards and drafts specifications that include the IFE Content Delivery Supply Chain.





## The Inflight Entertainment Market: IFE

- According to the new research report the Global In-Flight Entertainment Market is expected to reach US\$ 12.4 billion in 2027, registering a CAGR of 10.8% during the forecast period 2019-2027.
- The current market for licensed content in IFE was nearing US\$500 million in 2018 and grows at about 7% per year.





## The Inflight Entertainment Market: IFE

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The IFE window is 60 to 90 days from U.S. theatrical opening.





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  - Including MPEG Common Encryption (23000-7 CENC)
- In 2011 Lufthansa Systems introduced streaming
- Adopting MPEG-DASH





## The Inflight Entertainment Market: IFE

- Until recently, IFE systems followed a 2 to 3-year development, 10 to 12-year deployment cycle.
- Embedded in-seat systems cost \$5000 to \$14,000 per seat, or \$1 million to \$3 million per aircraft plus ongoing maintenance.





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- Wireless IFE eliminates wires and weight, and reduces cost.





## The Inflight Entertainment Market: IFE

- These capital costs are significant ...
- But so is the cost of content delivery ...
- Resulting in a 45-to-60 day content delivery cycle, and ...
- A 30-day minimum exhibition period.





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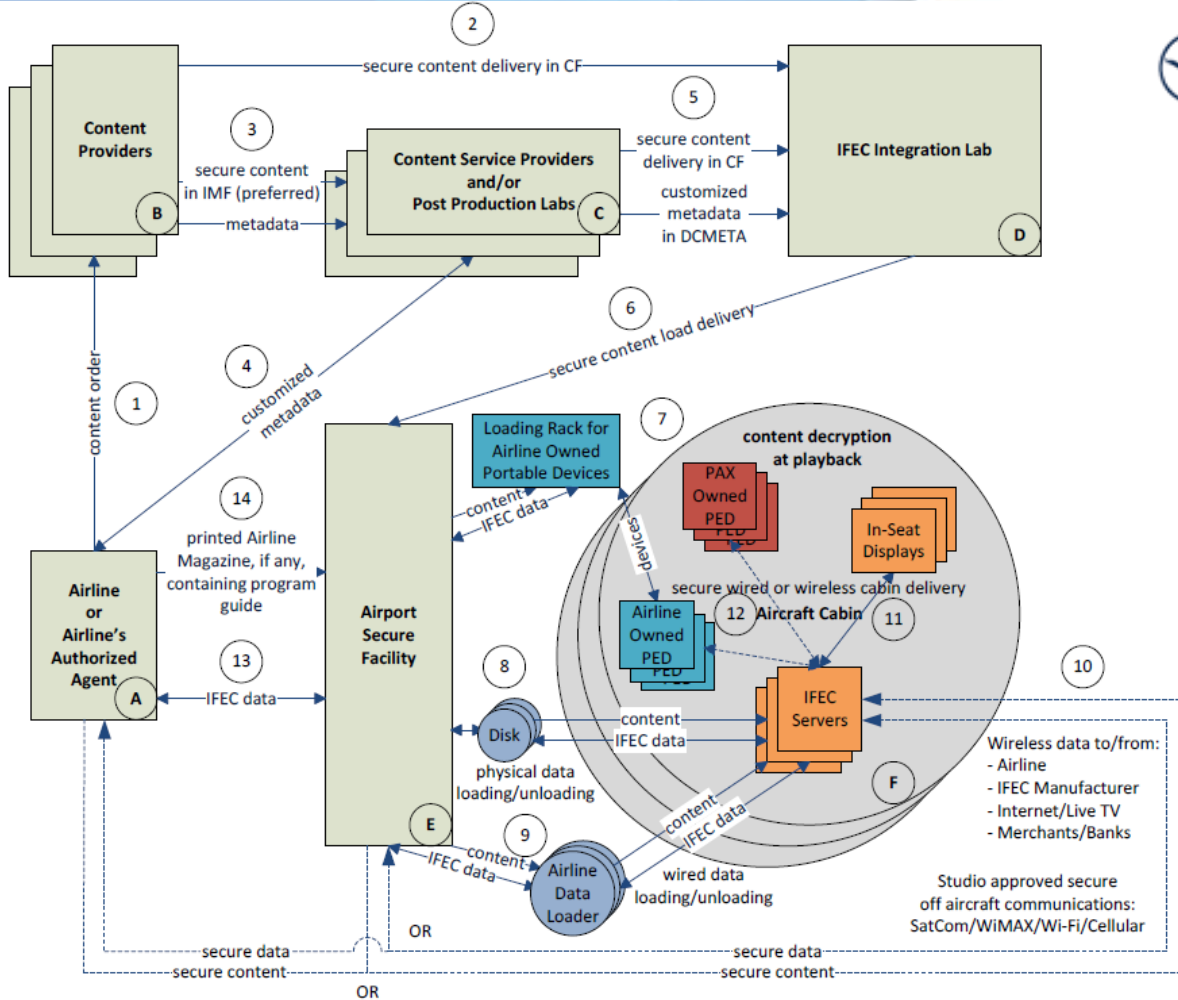


Figure 1: System Reference Model

Specialized post-production providers must move into the cloud or risk disintermediation.





## The Inflight Entertainment Market: IFE

Today

#Days


**Content Selection/Negotiation** -90

 Studios and Content Distributors

**Content Legacy Processing** -75

 Content Service Providers & Labs

**Content Legacy Integration** -45

 IFE System Providers

**Content Delivery** -15

 Airline & Aircraft

Tomorrow

#Days

**One-Stop-Shop Content Procurement Platform** -6

Our Value Proposition

**Cloud-Processing** -5

NEXT DAY

**Cloud-based IFE System Integration** -4

Vision/Future for the Industry

**e-Delivery** -1

Moving from a 45-to-60 day delivery cycle to next-day delivery requires the cloud and automation.

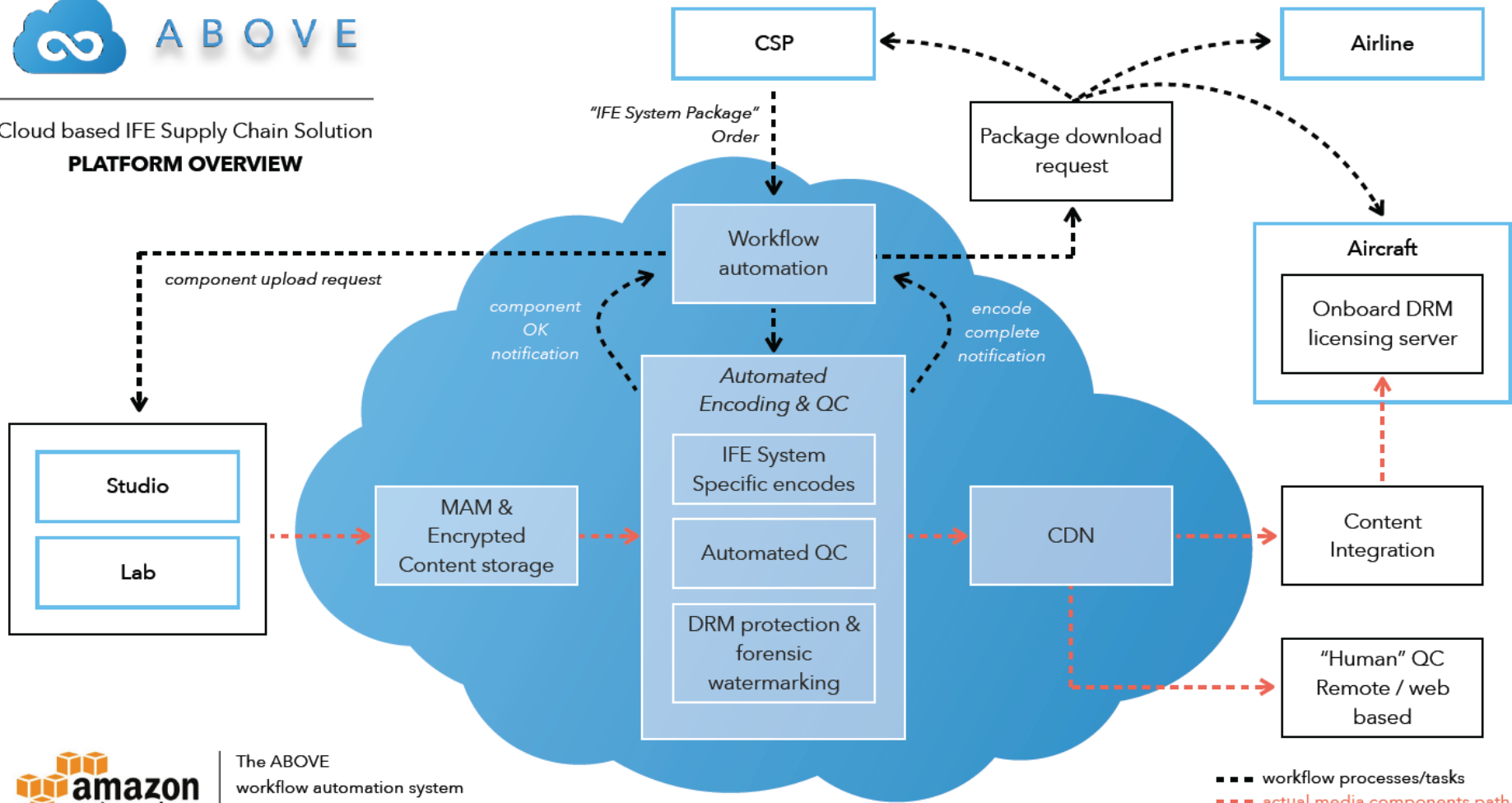
# apex



ABOVE

Cloud based IFE Supply Chain Solution

PLATFORM OVERVIEW



The ABOVE workflow automation system architecture runs in AWS

--- workflow processes/tasks  
- - - actual media components path

# Data Analytics

Usage Data Analysis

## Airlines are cash-poor, but data-rich!

**touch**  
analytics

an online platform in your hand,  
connected to your IFE systems  
and usage data



### connected

to any airline system usage data, with any  
frequency of update



### evaluate engagement quality

by measuring actual content play time &  
bounce-rate



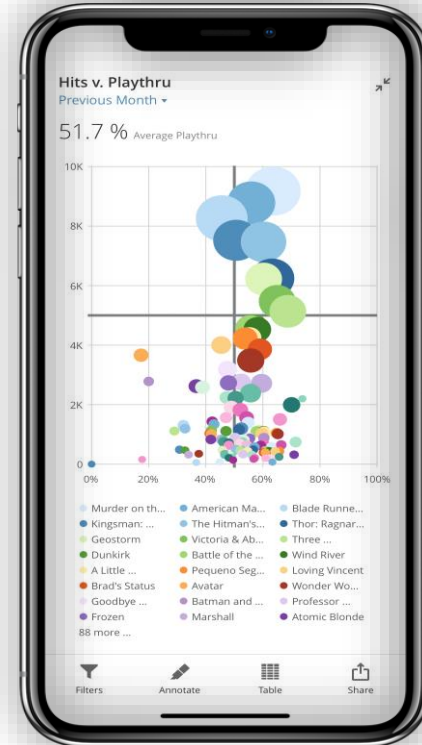
### drill-down analysis

usage data analysis by flight, customer or  
demographic profile and per content type



### correlation with surveys

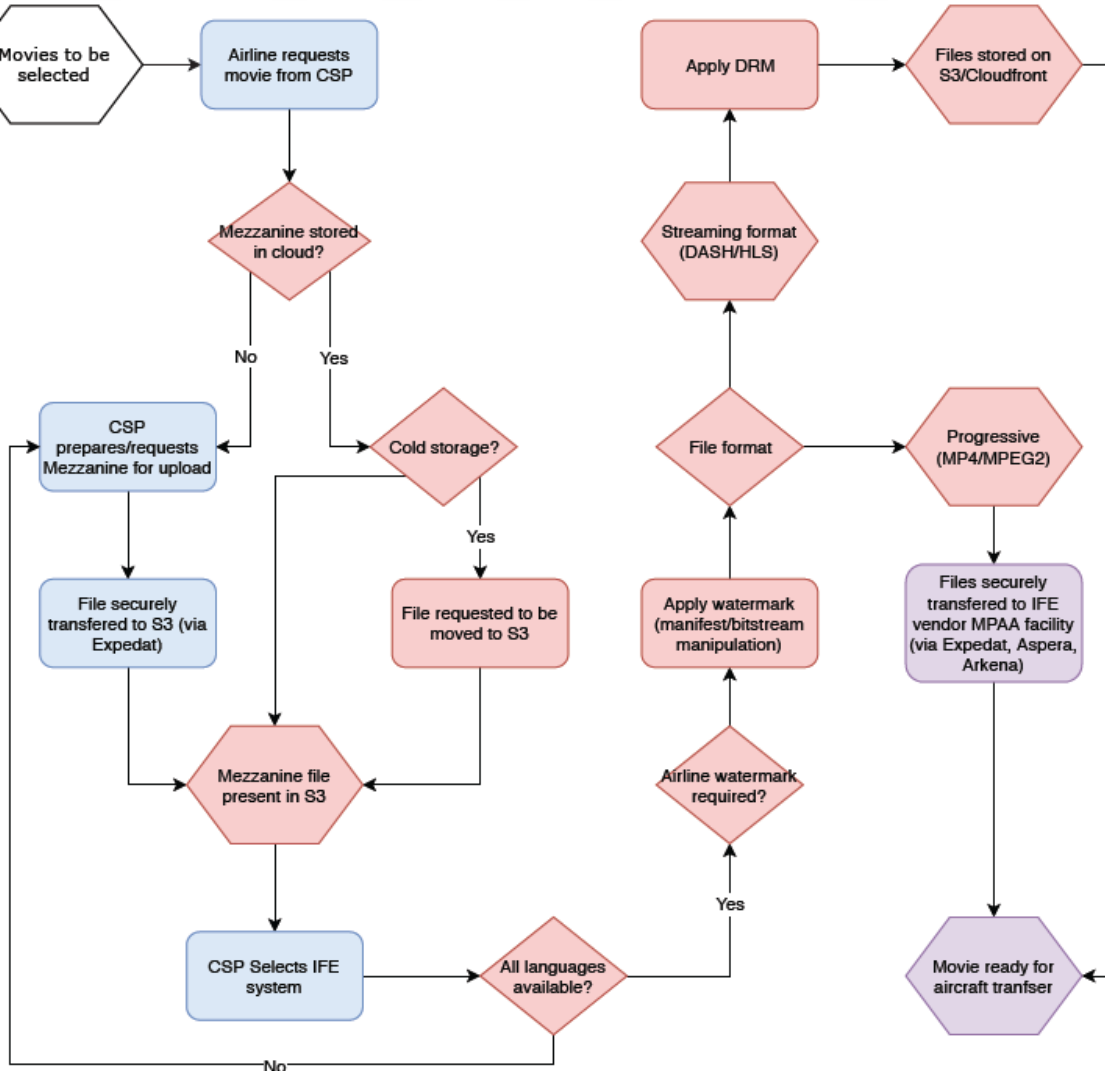
NPS and other KPIs o in a single dynamic  
platform





## Move to forensic watermarking

- Eliminate visible watermarks
- Bifurcate the process





# The Inflight Entertainment Market: IFE

The new content delivery supply chain in IFE:

- Content provider to send digital masters consisting of mezzanine files, preferably in Interoperable Master Format (IMF) configuration, directly to castLabs & the Amazon cloud.
- All value-adding assets—languages, subtitles, captions, audio descriptions, content attribute metadata, and “smart content” metadata—would be included.
- Encoding/transcoding would be done in the cloud, and the digital files needed for IFE would be made available for access in a repository in days.
- All necessary security and DRM would be added to these files.
- The integrator could then download the authorized file upon insertion of the license-specific DRM data.
- Content Integration would be fully automated and late-binding deployed.





**Lufthansa Systems**

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