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Issues impacting Closed Captions in IFE

Issue 1: IFE systems are not the same as consumer electronics:

- They are built to fly at 30,000 feet and comply with FAA safety requirements
- They do not natively support Closed Captions
- In 2006 the technology underpinning IFE systems could not support Closed Captions
- APEX codified a solution in 2009 that offered a means to support closed captions on that generation of IFE system
- Today, more than half of IFE systems flying support those kinds of closed captions
- IFE systems are architected to a 2-yr development, 10-13 yr deployment lifecycle
- The cost of an in-seat IFE system today is from $1 million to $5 million per aircraft
- Our industry stopped selling systems that do not support Closed Captions in the first quarter of 2015
- We replace systems at upwards of 5% per year
- IFE is a cost center for airlines, not a profit center

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Issue 2: Content does not "come with" Closed Captions

- They are most often created in distribution or exhibition, NOT in production
- They are not natively interoperable; nor were they created with repurposing in mind
- Until 2016 there have been no interoperability standards for Closed Captions
- The IFE content provider may not own them
- All other markets mandating CC are far bigger and their revenues easily cover the costs
- Since IFE uses repurposed content, and is much smaller, the cost to revenue ratio is not favorable to full implementation

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Source: businessclass.co.uk

Issues impacting Closed Captions in IFE
(continued)

Issue 3: While English-language content produced in North America enjoys a proliferation of Closed Captions in a number of markets, this may not be the case with other languages

- IFE is a global, multi-language market
- But many of the languages we support may not enjoy Closed Caption support in the countries of origin
- Many IFE languages are subtitled and must share the same screens as CC
- The subtitles may read right-to-left while the Closed Captions may read left-to-right
- Some IFE post-production facilities cannot support them together without costly upgrades in hardware and software

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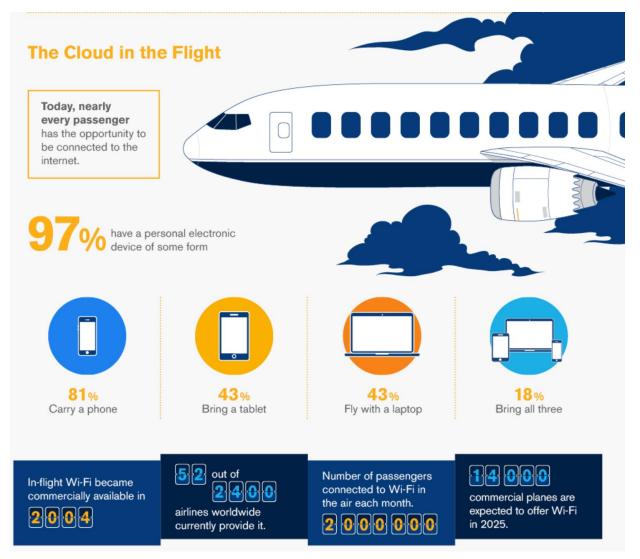
Issues in Closed Caption provisioning

Issue 4: IFE serves a multinational, multicultural base of passengers, both adults and children, with multiple edited versions of each program

- As many as 4 to 6 versions of a program
- CC support may mean editing the captions separately 4, 5 or 6 times
- Each of these then has to be formatted to 3 distribution silos
- And now we have 18 files.

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Connectivity In Flight Taking Off

The Cloud in the Flight

Today, nearly every passenger has the opportunity to be connected to the internet.

97% have a personal electronic device of some form

81% Carry a phone

43% Bring a tablet

43% Fly with a laptop

18% Bring all three

In-flight Wi-Fi became commercially available in **2004**

52 out of **2400** airlines worldwide currently provide it.

Number of passengers connected to Wi-Fi in the air each month. **2000000**

14000 commercial planes are expected to offer Wi-Fi in 2025.

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A long-awaited solution

The interoperability of Closed Caption technologies had no solution until this year.
But such a solution is now nearing adoption on a global, widespread, multi-market basis. It is IMSC1.

Next month APEX will submit to its members a comprehensive specification based on this new technology.
While it does not solve all of our issues, it introduces interoperability leading to decreasing costs and increased availability of Closed Caption content in IFE.

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Emerging solutions going forward

Our industry has desperately needed a solution at the top of the content delivery supply chain that enables interoperability of the disparate captioning technologies.

Such a solution has not been available until now. In 2016, IMSC1 has emerged as the likely format for cinema, packaged media, TV, and Internet content. It does the following:

- Provides guidance to IFE systems developers
- Provides guidance to Content Providers enabling a single deliverable
- Establishes an IFE profile at the top of the content delivery supply chain that ensures that our requirements are in the ecosystem.

This does not remove all obstacles, nor ensure that all content in all languages in all circumstances is immediately affordable. But it does substantially increase the availability of captions in IFE and at lower costs.

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