

Zii draft inputs to ARINC project paper 01_PP675_SM_1112_LF.docx:

3.1.1 IFE SW and Operational Data

In Flight Entertainment systems include a variety of software and operational data, the nature and volume of which is largely dependent on system configuration and airline contracted services.

Example software and data that could come from a ground facility to the aircraft might include:

- Core software –providing configurable system features and aircraft I/O
- Aircraft system configuration, including attached subsystems, router/firewall configurations and component types, locations, network addressing and default settings
- Cabin map to associate IFE equipment with passenger locations and cabin management services
- Airline specific feature configuration
- Entertainment content, videos, audio, terrain maps and reading material
- Airline provided content such as safety videos, destination videos, airport familiarization videos and service offerings
- Graphical user interface for passenger preview and selection of entertainment content
- Shopping catalog content and payment applications
- Onboard web portal content
- Flight scripts defining automated system behavior based on flight events
- Pre-Recorded Announcement Messages (PRAMs)
- Crew user interface for system control and maintenance
- Crew and maintenance procedures
- Connecting flight information

Example data that could come from the aircraft to a ground facility might include:

- Passenger credit card charges
- Passenger behavior and content usage statistics
- Maintenance logs and statistics

IFE information transfer can be broken up into five basic categories: software, system configuration data, entertainment content, UMS and transitory (per flight) data.

IFE core software typically incorporates all of the intended functions of the IFE system. All of the features of the core software are tested prior to delivery. Thereafter it is possible to enable or disable core software features without invalidating the core software configuration.

System configuration data is used to select specific features and interfaces of the IFE core software to meet customer requirements and aircraft configurations. Any IFE system configuration is a subset of the tested core software functionality.

Content that is loaded on the IFE system is thereafter presented by tested features in the IFE software. Core software should be designed to ensure continued proper operation in the presence of invalid content.

Transitory data such as connecting flight information, credit card charges and system behavior statistics is either consumed or generated by the IFE system.

Web-based active content such as interactive shopping catalogs blurs the boundary between content and software since content may include embedded scripts that modify presented information based on user responses. Active content should more correctly be treated as UMS.

DO-178C is not specific regarding the applicability or usefulness of UMS to DAL E systems such as IFE.

IFE software has its own a part number and Software Configuration Index (SCI) and is managed as part of the aircraft configuration. If UMS is to be loaded and executed on the same platform as IFE core software then IFE software must be designed to ensure that UMS executing on the same platform cannot invalidate the IFE software configuration nor interfere with IFE operation.