

More mobility for the world



Lufthansa Technik

Cabin & IFE Inventions



Passenger flight information
system – niceview™

The third dimension in infotainment



Your crew takes care of your customers – leave the in-flight infotainment to us

Doesn't it feel good to know that your passengers had an enjoyable and entertaining flight – and that they reached their destination with a smile on their face? A truly innovative in-flight infotainment system can make all the difference to them.

Flying in a new dimension

Finally, there is a way to give all passengers a window seat: The niceview™ moving map system provides worldwide, high-resolution 3-D maps and virtual flights designed to create the ultimate flight information and viewing experience. New and unique features keep passengers informed and help to create an enjoyable infotainment experience throughout the entire flight.

Sitting in the front row

With niceview™ integrating the latest flight simulation technology and authentic satellite maps, every passenger can experience the view from a window seat and encounter breathtaking scenes – no matter if it is day or night and independent of any weather conditions. Better still, niceview™ puts your passengers in the captain's seat and allows them to experience the same cockpit views as the pilots. And the adventure does not stop there. Departure, cruise-flight, and approach can be witnessed in

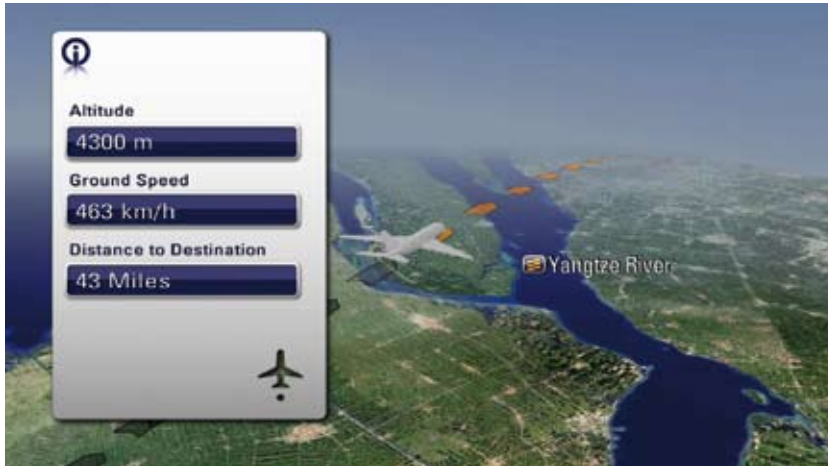
life-like 3-D views with configurable virtual camera positions around the aircraft. Exceptional camera perspectives and virtual rides can be generated in 3-D regardless of outside influences from take-off until touch down.

It is the real world

While a true 3-D view of the entire globe normally is the privilege of space astronauts in outer space, niceview™ provides an impressive presentation of the Earth together with a 3-D model aircraft at the current geographic position also showing the flight path. Zooming in, high-resolution views of the world with unlimited continuous map scales can be configured, also allowing the total flight route to be displayed. Virtual flights are also possible between the current origin and destination positions.

Besides the obvious passenger satisfaction, niceview™ is designed to relieve the cabin crew from tasks related to on-board passenger information and entertainment. The system can be configured to be operated with automated sequencing. All views and content data can be configured to be released by a customer definable trigger parameter such as flight phases or geographic locations.





3-D Aircraft View with Flight Track

All views can be witnessed in life-like 3-D views with configurable virtual camera positions around the aircraft. The appearance of the flight track lines can be customized, e.g. with a customer logo.

Customizable for each airline and aircraft

niceview™ comes with a PC-based system management application. This flexible tool enables airlines to configure viewing sequences and content data instantly. The list of options includes the loading and changing of customer pictures, movies, and audio data, advertisement pictures or movies, safety briefings, destination and airport information as well as boarding music and audio announcements.

New content data or configuration changes can be loaded via USB devices or Ethernet connection onto the niceview™ server.

The new and unique features of niceview™ keep passengers informed and help to create an enjoyable infotainment experience throughout the entire flight.

- Photo-realistic 2-D and 3-D views
- Virtual camera views from around the aircraft and along a virtual flight route
- Lifelike views through cockpit and cabin windows
- Display of pictures and movies, including multi-channel audio
- Background MP3 audio replay (e.g. boarding music)
- Various customizable geopolitical, graphical and information overlays
- Configurable viewing sequences for different flight phases and geographical locations
- News and information
- 2-D and 3-D indicator paths to locations relative to the aircraft
- Selectable transitions between views
- Illustrations of oceanographic data

Real-time news and flight information displayed automatically – from gate to gate

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Departure

While the aircraft is at the gate before flight, niceview™ can automatically display a customer logo or welcome screen 1 while playing boarding music to welcome passengers. During taxi from the gate to departure the safety briefing 2 can be

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scheduled for presentation. When the cabin crew would like to have control over the release of the briefing the movie can be started from the IFE system control unit. When the briefing is complete the movement of the aircraft can be shown on

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a 2-D high resolution scenery view 3. When the aircraft is departing niceview™ generates spectacular perspectives in true 3-D such as the cockpit window view (see on page 4) to make the passenger feel as though they are at the controls like the captain.



Up-to-date connecting flight information

How does my journey proceed after arrival? Where is the arrival gate and where do I have to go after landing? The answers to these questions are as individual as the travel plans of your flying customers. With niceview™, your passengers stay informed. For their convenience and up-to-date information, the latest arrival gate, connecting flight and weather data can be shown as a graphical or alphanumeric overlay to any pictures, 2-D or 3-D. Even when a movie is running, such data can be shown in a ticker or banner.

Keeping in touch

With the niceview™ management application, various informational overlays and pages can be preconfigured to show current flight data which are received from airborne communication links via Ethernet (Sat-Com/Broadband) or ARINC-429 (ACARS). The global standard resolution of 120 meters per pixel (mpp) allows staggering 3-D animations during cruise flight. For regional coverage 15mpp data is available for any place in the world, allowing even more impressive details. For departure and approach, imagery resolution of 1mpp can be provided for customer selected areas such as airports and cities.



Cockpit Window View

niceview™ allows passengers to experience the same views as the pilot, even during departure and approach phases. Simultaneous informational overlays can be displayed to illustrate the surroundings of the current aircraft position or to show the latest news.

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Cruise

During cruise flight various 2-D and 3-D views can be presented. The Total Route view 4 with flight track line, departure and destination airport can be shown in 2-D or 3-D. Also, any data received by niceview™ from aircraft systems can be configured to

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be shown on aircraft displays 5. The data names can be translated in various languages while data values may be shown in different units. For all views, customizable ticker tapes and banners are available for the simultaneous

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presentation of flight related data, pre-defined text messages or current news. Even time and date based scripting is possible, e.g. for advertisements 6, pictures and movies including multi-channel audio.



Flying with High Definition (HD)

Depending on your hardware selection niceview™ provides various audio and video interfaces to the IFE system. Beside standard definition video signals (NTSC/PAL) also high definition video output (HDTV) is available. Additionally niceview™ is capable of MPEG audio and video streaming to digital IFE environments. To support multi-channel and multi-language content niceview™ provides up to 6 mono audio channels. Alternatively, 2 stereo audio channels and 2 digital S/PDIF channels can be operated.

Customer Support

The business unit Innovation has established a customer care call and technical support center located at its headquarters in Hamburg, Germany. Telephone calls can be made directly to the Customer Service Innovation, for technical and maintenance support assistance. Innovation has integrated a niceview™ system mock-up at its customer service facilities – so that the support personnel can troubleshoot specific customer configurations while speaking directly to the aircraft operator. Where required, Innovation can send their on-site support technicians to troubleshoot or exchange components of the niceview™ system.



Cabin Window View

With niceview™ every passenger can experience the view from a window seat and encounter breathtaking scenes – no matter if it is day or night and independent of any weather conditions. Passenger windows can be displayed with or without aircraft structure such as wings and engines.

Easy configuration

Providing a multitude of options and features, niceview™ is set up for easy configuration.

- Loading and changing customer pictures, movies, and audio data
- Advertisement pictures or movies
- Safety briefings
- Destination/airport information
- Your company logo
- Boarding music and audio announcements
- Definition of any trigger parameter such as flight phases, city pairs and geographic locations for automated sequencing
- Management of language translations
- Editing and loading of geopolitical data (e.g. point of interest)
- Adjustment of interface characteristics with respect to your aircraft environment and IFE topology
- Loading of imagery extensions and updates

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Approach

When reaching the destination airport arrival and connecting gate information **7** in different languages are of interest for the passengers. Additionally 3-D views **8** can be configured for this flight phase to

8



get in touch with the surroundings – independent of any visibility conditions. The high resolution of niceview™ allows passengers to be visually involved with the final approach **9** to the runway. The 3-D approach view

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replaces a comparable camera without any limitations due to missing light or bad weather. On the way to the gate after landing you can prepare your passengers by showing short movie clips or some slides.



A really nice view of the world



High Resolution Views

For departure and approach, imagery high resolution of 1 meter per pixel (mpp) can be provided for customer selected areas such as airports and cities to create a life-like view to the outside. All views can be overlaid with multilingual text information in numerous ways.



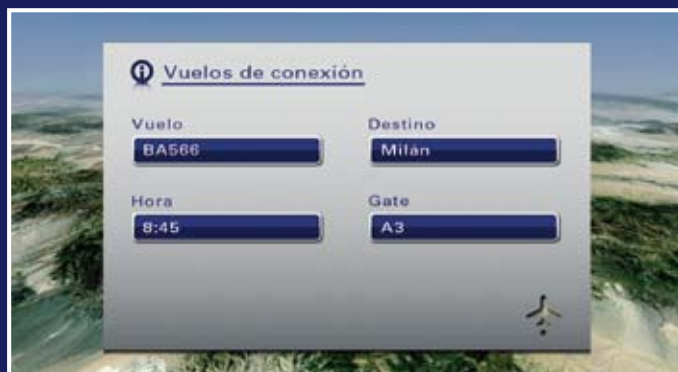
Political Map

2-D views with unlimited continuous map scales can be configured as a moving map or by moving aircraft with the current heading or north up. Geopolitical names and frontiers can be displayed in many languages.



Tail Camera View

With traditionally installed cameras the visual view is normally limited during night and bad meteorological conditions. With niceview™, exceptional camera perspectives such as Tail or Nose-Gear and virtual rides around the aircraft can be generated in 3-D regardless of outside influences from take-off until touch down.



Multilingual niceview™

Any data displayed by niceview™ can be translated in various languages while data values may be shown in different units.



3-D Globe/Day-Night View

The sun is shining on one side of the globe while on the other side of the world beautiful night lights are illuminating the Earth. Depending on the actual season and time, niceview™ presents accurately the day/night terminator together with global night lights. As with all views, overlays such as the aircraft symbol and other information can be selected.



Locations Relative To Aircraft

In order to display the correct orientation to locations relative to the aircraft different indications can be configured as an overlay to the 2-D and 3-D scenery displays or as a separate graphical view. Also multiple locations can be shown at the same time together with associated information such as direction and distance.

