



# Lufthansa Technik

Cabin & IFE Inventions

Business jet infotainment  
redefined – nice® HD

Have a nice flight!



*"Finally, I can read my favorite newspaper online and control my aircraft's entire IFE and communications system intuitively with my own iPad®, iPod® touch or iPhone®."*





The third generation nice® Graphical User Interface (GUI) is designed around a simple scroll wheel corresponding with an animated color GUI on the nice® HD Control and Media Touch Screens.



## The nice way of life

Imagine not having to get up to change a CD or DVD, to start your favorite Blu-ray movie on an HD display, or to adjust the cabin lighting to create the right mood. Wouldn't it be nice to be able to access all the cabin, communications and entertainment devices on board your aircraft with your smart phone or tablet PC, such as the iPhone®, iPad® and iPod® touch.

At the same time meeting today's stringent requirements for the streaming of high-definition (HD) content with integrated digital rights management and Hollywood-approved encryption! How about wirelessly accessing the Internet just the way you do at home, or viewing real-time images of the outside world captured by on-board cameras and displayed on any screen in the cabin?

### Dreams in high definition

With Lufthansa Technik's networked integrated cabin equipment nice® HD, effortless management of highly sophisticated cabin systems in your aircraft has become a reality. Since the first installations and certifications in 2003, the nice® system has become the acknowledged industry standard for high-quality in-flight entertainment and cabin management systems on large and small business jets alike, used by kings, sultans, business leaders and corporate flight departments all over the globe. And the latest generation of nice® – high definition-enabled nice® HD – can rightly claim to be the best cabin management, communication and entertainment suite on the market!

### From the world leader in aircraft services

nice® HD is the focal point of a development and production organization renowned for its innovative and trendsetting products. Lufthansa Technik has a proven record of continuously analyzing current market trends and technical advances and applying this unique expertise to its products. Incorporating an iPhone®, iPad® or iPod® touch as a content on-demand provider and Satellite Live Radio/TV into the highly integrated digital network of nice® HD are just two examples of a market approach that has oriented itself from the outset towards sustaining growth and continually integrating the newest technologies.

### Smartphones? No problem!

Mobile consumer PEDs (personal electronic devices) such as smart phones or tablets can be linked to nice® HD via an HDMI cable to feed high-definition content into the system. Content security is achieved through the system's integrated DRM system. This makes it possible, among other things, to connect Apple TV to the system, allowing users to stream content wirelessly from an Apple computer or iPad® to Apple TV and then into the nice® HD system. Innovation is also currently developing a wireless framework that will enable multiple Apple and Android smart phones/tablets to interface with the nice® HD system for viewing video. Ready in 2013, most baseline systems will only require a software upgrade for this added function.



Examples of the Graphical User Interface (GUI). The GUI offers an automatic adaption to the respective aircraft. Once on board the GUI adjusts itself to allow control of all cabin functions available.

**nice® HD**

Networked Integrated  
Cabin Equipment



*"If only the flight was longer! Watching a movie on the plane through the nice® system is like being in a movie theatre. The stereo system and surround sound are amazing."*

## For a nice time on board

### **Perfect entertainment and communication**

It's so easy and exciting that you won't want to leave your aircraft: nice® HD does away with the multitude of analog, serial bus and autonomous digital networks that used to be required to control aircraft cabin equipment and distribute media, data and communications. nice® HD is based on a fully integrated wired and wireless Ethernet network. It integrates all passenger cabin functions in a single system with a minimum of components, which makes a nice® HD installation both very reliable and easy to maintain.

### **The right mood at your fingertips**

What's more, nice® HD makes managing this vast array of devices easy. The remote control system, the most advanced and easy-to-use of its kind on the market, has Lufthansa Technik's proprietary animated Graphical User Interface (GUI) and offers complete control of the cabin environment in the palm of your hand. So when you choose nice® HD you can be certain that your personal travel experience will be enhanced and your flight hours will be among the nicest of your life.

HD Control and Media Touch Screens can be used as a personal display or large PCU (picture on this page) or, when partly stowed, as a small PCU with quick access functions (picture on right page).



nice® remote for iPhone® and iPod® touch to control the entire cabin, can be used on an iPad® also.



### Always ready for new ideas

Thanks to its open architecture, nice® HD is highly configurable and flexible, allowing Lufthansa Technik to offer a wide number of cabin equipment packages – from lighting and environmental control to the highest quality in audio and video entertainment. And it goes without saying that third-party solutions such as satellite communications and TV, portable audio/video devices or cameras can also be integrated easily into the nice® HD suite.

How about one small LRU that will play a Blu-ray disc, provide a media file server, and also provide a basic niceview™ moving map system? nice® HD's Media Center will host all three functions and simultaneously playback two functions at once in HD! All in the size of the previous DVD player.

### Fit for the newest technologies

With its high-bandwidth Ethernet architecture, nice® HD enables high definition video. HD and DVD sources can be distributed throughout the nice® HD network, secured and controlled via the integrated Digital Rights Management (DRM) system. nice® HD thus offers a clear path to future technologies while protecting your investment.

### Built with the future in mind

nice® HD's Ethernet technology is the established standard for digital networks and the most popular and best-supported standard of the computer era. Lufthansa Technik's Innovation business unit has continuously developed and advanced its experience and capabilities in the area of aircraft-based Ethernet networks. Thus, changes and system upgrades to an installed nice® HD system will be possible without expensive rewiring or structural modifications. This makes it the ultimate technology in terms of sustainability and supportability – truly 'future-proof'.



### Customer advantages

- Highest video and audio quality on the market (1080p, full HD) – depending on screen resolution
- Easy to use, install and maintain
- Ethernet-based distribution of HD content
- Fully integrated Digital Rights Management (DRM) framework – fulfilling the requirements of the major Hollywood studios
- Capable of handling multicast streaming of HD content and full audio/video on-demand, including readiness for early window content (content not yet released on disc).
- Multi-tasking user interface with animated Graphical User Interface – operated with integrated scroll wheel and touch screen
- Highly configurable, customizable and flexible integrated network
- Interoperable with portable consumer devices, such as smart phones and tablets
- High integration of functionalities results in reduced number of line replaceable units (LRUs)
- Open architecture allows for easy integration of third-party equipment and new applications
- Supports both wired and wireless Ethernet for system control and Internet access, with wireless video distribution coming soon
- Very reliable, advanced and continually improved with:
  - Highly Accelerated Life Tests (HALT)
  - Highly Accelerated Stress Screenings (HASS)
- 24/7 customer support
- Global logistics support network



One of the video sources, shown on the HD Control and Media Touch Screen display, can be Lufthansa Technik's new moving map system niceview™ lite.

## Ready for Hollywood movies

### Integrated Digital Rights Management

Many talk about it, but Lufthansa Technik is ready to do it: streaming of high definition (HD) videos in business jets via the IFE network. Thanks to Ethernet expertise in business jets that has been developed and demonstrated over years, nice® HD puts Lufthansa Technik in the unique position of being able to offer a system that fulfils the high standards of the major Hollywood labels through absolutely secure DRM.

### Approved content encryption

DRM is short for Digital Rights Management, a system for protecting the copyrights of data circulated via the Internet or other digital media by enabling secure distribution and/or disabling illegal distribution of the data. DRM and content security are essential features of a high definition IFE system such as nice® HD, because they protect the ownership rights of content providers and meet, for example, the requirement for receiving HD audio/video on-demand content or distributing HD content within the aircraft network.

Lufthansa Technik is convinced that Digital Rights Management is more than just the encryption or transport protection. We regard it as an essential part of any future-proof IFE/CMS solution.

### Digital Rights Management:

- Protects and secures the entire distribution chain
- Is required to receive HD content from the studios
- Provides secure algorithms, embedded playback/distribution rights, and license management
- Allows the IP-based distribution of HD content within nice® HD
- Allows distribution of HD content via audio/video on demand within nice® HD

### Ready for the “analog sunset”

As the future-oriented IFE/CMS system, nice® HD, as a fully digital system is optimally prepared to help you to avoid problems with the “analog sunset” of Blu-ray players that play HD movies.

### What you should know:

“With the exception of existing models, any licensed player manufactured after December 31, 2010 shall limit analog video outputs for decrypted Advanced Access Content System (AACS) to Standard Definition (SD) interlace modes only. No licensed player that passes HD Blu-ray content (decrypted AACS) to analog video outputs may be manufactured or sold after December 31, 2013.”

*“Lufthansa Technik does not practice security by obscurity! We use secure algorithms accepted by the major Hollywood studios!”*



Follow this QR code for more information about the nice® system portfolio.



## Really nice support

### **Lufthansa Technik's business unit Innovation**

is responsible for the development, production, distribution and support of state-of-the-art technical solutions aimed at offering customers the most advanced cabin environment possible.

### **Customer Support Innovation (CSI)**

A 24/7 customer care call and technical support center is available at Innovation's headquarters. Customer phone calls are routed directly to Innovation's customer service and secured data exchange is available for technical and maintenance support. Outside of normal business hours, calls are routed through the Lufthansa Technik AOG desk for tier-one support.

### **Logistics**

Innovation's logistics are supported by Lufthansa Technik Logistic Services' worldwide network and Lufthansa Cargo's fast delivery of parts where needed. Support of the nice® HD system is enhanced by the use of aviation-approved RFID tags on each LRU and the nicemate™ remote support unit – enabling proactive maintenance and a 24/7 response to our customers' needs.

### **Repair and maintenance**

As part of the global Lufthansa Technik Group, Innovation also has access to repair and maintenance facilities in more than 20 countries around the world.

At Innovation's headquarters, experienced technicians and engineers are available in the customer support center.

The building of the Innovation business unit: Five stories provide a total gross area of 6,500 square meters, 2,500 for offices and 4,000 for laboratories and workshops.



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www.lufthansa-technik.com/nice  
www.nice-system.com

**nice® HD**

Networked Integrated  
Cabin Equipment



«nice remote» for iPhone®, iPad® or iPod® touch allows control of the entire nice® HD system. The required software can be downloaded from the App Store®.

## Typical baseline equipment

The standard composition of nice® HD devices creates a harmonic cabin atmosphere.

### Controls

#### Graphical User Interface

Lufthansa Technik's third generation nice® Graphical User Interface (GUI) has been developed to adapt to a wide range of aircraft types and customer requirements. It is designed around a simple scroll wheel integrated with an animated color GUI from which user selections are easily made. The interface also includes a touch screen mode, so that the user can make selections by using the scroll wheel or touching the screen of the Passenger Control Unit. The GUI offers a high degree of freedom in software customization, with regard to display layout and color adjustments.

#### Passenger Control Unit

Designed for standard seats, the nice® HD system offers a Passenger Control Unit (PCU) with a 4.3" touch screen display showing the color GUI that may be used in combination with the scroll wheel as well as remote jack modules for headsets and USB/HDMI ports for third party devices. The 4.3" screen is also capable to display video content from selected sources within the network.



#### Scroll Wheel

The scroll wheel allows you to easily navigate the GUI on nice® HD control displays, by "scrolling" a wheel with a finger or thumb. Simply scroll up or down on the corresponding animated GUI and push to enter the chosen function. The scroll wheel is combined with simple buttons for table light, reading light, and calling the flight attendant. Typically the scroll

wheels and buttons are mounted into side ledges near the arm rests of the seats.



#### HD Control and Media Touch Screens

Complete control of the CMS/IFE system is made possible with the 7" or 10" HD Control and Media Touch Screens which are supporting HD video resolutions. These displays have probably the most elegant and thinnest design ever seen in the aviation industry.

They are mounted in a pop-up mechanism and can be used either partly stowed for take-off and landing or deployed for cruise. When stowed, the top quarter portion of the display is still visible and can be used for control by providing a reduced GUI for the usual seat, cabin and media controls. When popped up, the displays can be tilted and pivoted to optimize the viewing angle and offer access to the entire GUI. Additionally the 7"/10" displays are designed for personal video display.



#### HD Galley Control Panel

Full system and configuration controls are made available to the crew via a 7" HD Galley Control Panel (GCP) typically located in the galley area. It offers the same control functions as the HD Control and Media

Displays with additional access to system monitoring and administration functions integrated into the same intuitive GUI concept. The control function in combination with the integrated headphone jack allows the crew to test audio and video sources before activating them on cabin devices.



#### System administration

The entire nice® HD system can be administrated via the HD Galley Control Panel by having access to the configuration database, configuration firmware and system applications. The HD Galley Control Panel is the central point from which the system is configured and updated. It ensures that maintenance procedures and reconfigurations of the system are simple and easy. To update the system configuration all you have to do is plug-in a storage device into the USB port at the HD Galley Control Panel.

#### Membrane Switch Panel

Lufthansa Technik is offering a variety of single-, double-, triple- and multi-button Membrane Switch Panels. They provide a traditional passenger interface and connect to discrete inputs such as reading/table light, call, and flush (for lavatory).



#### nice® remote for iPhone®/iPod® touch/iPad®

Additionally the entire nice® HD system can be controlled wirelessly with «nice remote» for iPhone®, iPod® touch or iPad®. The required software can be downloaded from the App Store®.

#### Electronic Flight Bag Interface

The nice® HD system offers wireless and wired interfaces for Electronic Flight Bag (EFB) devices to control the nice® HD system.

### Media sources and interfaces

#### Media Center

The Media Center incorporates functionalities of a Blu-ray player, a 3D map server, a media file server and a HD movie rental service. The Media Center can simultaneously generate two HD video streams to be distributed via the nice® HD network. A planned HD movie rental service will allow subscribers to purchase the rights to watch newly released and early window content.



#### iPhone®/iPod® touch/iPad® Interface

Lufthansa Technik is offering a fully integrated iPhone®/iPod® touch/iPad® Interface for full access to the movie and audio libraries via the nice® HD network. Full integration means that the Apple device can be plugged in at a remote location and is operated and controlled through the nice® HD GUI. Also, the interface includes the Apple Authentication Chip allowing access to the full iOS feature set.





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