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# PRESS RELEASE

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## New Technologies make FIDS Screens last longer

Flight Information Display Systems have been guiding Passengers through airports for many decades. CONRAC was and still is a technological leader when it comes to FIDS-displays and –systems. First was the electromechanical large Split Flap displays which were popular in the Sixties of the last century, then CRT based displays were introduced and were “state-of-the-art” throughout the Eighties and Nineties. In 1996 CONRAC GmbH was the first to introduce large screen PDP displays for FIDS applications.

FIDS screens were always and still are more stressed than conventional commercial TVs and monitors. They are mostly used 24hours per day 7 days per week for many years, they display mainly static information and are subjected to dust and other environmental influences in public buildings.

Both CRT and PDP technology – being active displays using phosphor as their light emitting material – the so called “Burn-In” effect formed by static images was accepted as no other technology was available.

That changed with the introduction of large screen LCD/TFT displays in 2002. The expectations were high as LCD is not an active display but merely a “light switching” device, subject to no wear and tear apart from the aging of the backlight tubes.

As the devices started to get deployed in earnest, reality told a different tale and everybody, including the manufactures of the LCD/TFT panels faced a surprise. Suddenly there was talk of “Image Sticking”, “Boundary Line”, and “Uneven Picture” or whatever other designations were given to the disturbances visible on the screens. Panels that were originally developed for TV applications turned out to behave differently when subjected to the constraints of an airport environment. Chemical reactions within the panels caused a deterioration of performance that became visible on the screens under 24h/7d displaying static images.

Today it is generally recognised that all LCD/TFT panels have a limited lifetime and are subject to some kind of static image effects that become visible after a certain time of operation.

CONRAC GmbH is constantly checking the long term performance of LCD/TFT panels from various manufacturers in its own test lab, where the panels are continuously stressed using extreme test patterns at 40°C ambient temperature for months and years.

In addition to selecting the best performing LCD/TFT panels, CONRAC's engineers have developed a variety of countermeasures to combat these effects, which are combined and are marketed under the CONRAC cTEC label. cTEC is fully implemented in all CONRAC's Public Displays including controller hardware and software providing measures to greatly increase the lifetime of our displays using LCD/TFT panels.

The cTEC label comprises:



Ambient Light Control

ALC controls the backlight brightness according to the ambient light, and other light sources such as reflection. This provides for optimum legibility and at the same time expansion of the display lifetime. Significant saving of electrical power is another advantage of this feature which makes it not only cost effective but also, environmentally friendly by contributing to the reduction of carbon dioxide.



Dynamic Pixel Refreshing

The intelligent dynamic refreshment of the TFT cells greatly reduces “image sticking” when static pictures are displayed for a long periods.

## cPXS

Pixel Shifting

Continuous pixel-wise shifting of complete picture content minimises "image sticking" when static images are displayed for a long time.

## cSPM

Soft Picture Mode

An intelligent scaling algorithm smoothes out extreme contrast transitions and thus effectively prevents the "boundary line" image sticking normally common to all LCD TFTs.

## cTCS

Temperature Control System

Active monitoring and controlling of temperature inside the display reduces panel degradation, increases the lifetime and optimises energy consumption.

cTEC is available for all CONRAC FIDS displays and is an integral part of the hard- and software package that comes together with the devices.

It is also integrated into the latest 82" FIDS display which provides outstanding possibilities to be used as arrival/departure board as well as for advertising and other graphics and video applications.

CONRAC FIDS displays with integrated cTEC Functions provide an airport operator with the best possible Total Cost of Ownership ratio during the time of their usage.

It is by using dedicated products developed especially for the FIDS application that enables optimum customer satisfaction with the lowest operational costs.

A company that is committed to the airport market and not seeking to expose its consumer brand name will in the long run provide customers with the best and most reliable solutions. Proof is the more than 220 airports worldwide that are using CONRAC's FIDS products since many years.

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Photographs supplied

- conrac\_001.jpg, conrac\_002.jpg, conrac\_003.jpg: Special in-house facility for long-term stress testing of LCD/TFT displays at 40°C
- conrac\_004.jpg, conrac\_005.jpg: Flight information displayed on CONRAC 46 inch Public Displays installed in portrait mode at Frankfurt Airport, Germany
- conrac\_006.jpg: Departure board at Frankfurt Airport: Cluster of 40 inch LCD/TFT displays
- conrac\_007.jpg: CONRAC Public Display for baggage belt info
- conrac\_008.jpg: CONRAC headquarters in Weikersheim: R & D and manufacturing in Germany
- conrac\_009.jpg: Flat panel production in Weikersheim/Germany