Photo: DSNA / JM. Byl

Q&A: JEROEN DEBONNET,

ATC product manager, ScioTeq

ScioTeq is a new name in ATC displays, with a long heritage in the sector from its Barco and Esterline brands.

Q: Why have Esterline and Barco been rebranded as ScioTeq?

A: In 2019, Esterline Advanced Displays decided to focus more on its own strengths, and launch a new brand name: ScioTeq. This rebranding is also related to the acquisition of Esterline Technologies Corporation by the TransDigm Group.

Q: Why was ScioTeq chosen as the new brand name?

A: Scio in Latin means "I know, I am aware, I understand, I am conscious." This reflects our focus on helping our customers to meet demanding situational awareness needs through the use of advanced visualization solutions on aircraft, ground vehicles and ships, and in air traffic control (ATC) environments.

Q: What does the rebranding mean for Barco and Esterline customers?

A: The team supporting the ATC market remains the same; the majority of the team started working in Barco in the 1990s, and contributed to the introduction of the first 28in 2Kx2K LCD display. Thus our customers can expect the same levels of quality and service that they have become used to over the past 20 years.

Of course, the name change is a major challenge, for both us and our customers, in terms of "getting the word out" that we are still in the business, with the same products and the same team, but with a completely different name.

The rebranding was in May, but we still meet people looking for Barco, unaware of the name changes. I'm sure that this October at the ATCA Annual conference and expo in Washington DC, we will also meet people looking for Esterline, not knowing about the ScioTeq brand yet.

Q: Can you name any of your major customers?

A: ScioTeq serves the worldwide ATC market. To name just a few clients, in North America we sell to system integrators including Raytheon and Leidos, and also directly to the FAA and NavCanada. In South America, we sell both to systems integrators and ANSPs (air navigation service providers).

In Europe, we have integrators such as Thales, Indra, Leonardo and Harris in our customer base, and also end users including EuroControl, SMATSA, DSNA, LVNL and

Left: ScioTeq display systems for ATM and ATC provide accurate real-time information throughout the ATM system

Opposite: The MDP843 in use by DSNA

ENAV. We also have a very good foothold in the China, India, Asia, Africa and Oceania markets.

Q: What makes ScioTeq displays unique in the ATC market?

A: One of the things that makes us unique is the fact that the design team developing the ATC displays is also the same team making rugged displays and avionics (cockpit) displays. Of course the process requirements for cockpit displays are a lot higher than for ATC displays, but we still share the same toolset for our design and our reliability testing, and we build from the same knowledge base.

The ScioTeq team allows no compromises on quality, reliability and optical performance, always looking for new ways to improve our products.

We also provide product support over a long period of time, which is important in all our markets for avionics, defense and ATC. This support requires us to actively monitor for the obsolescence of electronic components, and pro-actively update our designs when needed.

Advances in technology also inspire us to update our designs. This is the reason why our 28in 2Kx2K display has already had three technology upgrades, from the first generation display to today's fourth-generation design. All these initiatives, when brought together, result in low lifecycle costs and keep our products operational, 24/7, for many years.

One example we are proud of is that when we were replacing the installed base at EuroControl, the average runtime of the Barco displays we were replacing was 13.5 years, without any reliability issues. Some displays even had an uptime that was approaching 17 years.

Q: Can ScioTeq displays be customized for individual customer requirements?

A: They certainly can, and we have already customized many displays. Our customer focus is an important part of our added-value offering. These customizations can take many forms, including mechanical adaptations, firmware adaptations, optical improvements, and even customer-driven electronics developments to add specific functionalities. In short, we are able to deliver complete customized visualization solutions. We are very happy to meet with customers to discuss how we can meet their individual requirements.

Q: What are your key technologies for main radar screens?

A: We are very proud of the LCD in our 28in 2Kx2K display. The custom LCD is manufactured by our OEM supplier, Panasonic in their Himeji 8th generation plant, and it is specifically customized for ATC use. In my opinion, Panasonic has one of the best LCD technologies on the planet.

One of our main challenges recently has been to bring a 43in 4Kx2K display to the market, with the same level of quality as our old 28in unit. Here, we started from a

TECHNOLOGY TIMELINE

With over 250,000 display solutions fielded in the last 30 years, ScioTeq's advanced visualization products can now be found on board more than 150 aircraft types, more than 100 ship types and more than 50 vehicle types. Every day, more than 80,000 flights are controlled from a ScioTeq ATC display. So how did the company achieve such success?

- In 1949, Barco started developing television sets, and in 1967, it was one of the first European companies to introduce color TV
- In the 1980s, Barco started focusing on more professional markets such as aerospace and defense. The displays were first CRT based, but in the 1990s moved to LCD technology, which allowed higher levels of ruggedization
- In the 1990s, with the evolution of LCD technology, Barco was one of the first companies to bring COTS-based LCD displays to demanding environments, using patented LCD-based technologies. With the acquisition of Chromatics in the USA, Barco gained unique graphics generation technologies that were embedded in its display products, bringing smart symbol generation capabilities to its displays
- In 1998, Barco's Defense & Aeropace division started developing the world's first square 28in 2048x2048 LCD display. This display was officially introduced in 2000, and quickly became the world standard as main radar display for ATC, replacing bulky CRT screens. This display received much acclaim by the ATC industry, and in 2001 it received the New Technology award from Jane's Information Group
- In 2015, Esterline acquired Barco's Defense, ATC, Avionics and Training business, which evolved by combining other Esterline display capabilities, to become the Esterline Advanced Displays business unit
- In 2019, Esterline Technologies Corporation was acquired by TransDigm, and the Esterline Advanced Displays business unit was renamed ScioTeq.

The TCD361, MDP843, MDP471 are bright, high-resolution and reliable ATC displays

commercially available LCD, but made several improvements for better optical quality, better reliability and longer lifetime.

Q: What are your key technologies for tower control displays?

A: In the ATC tower, key requirements are high brightness with low dimming, viewing angle, low reflection, and touchscreen capability.

Our 24in TCD361/2 is based on an LCD from the same Panasonic factory as our 28in display, which ensures good viewing angle characteristics. The high brightness is attained using the most recent LED backlight technologies, and the protective front filter glass uses high-end etchings and coatings. We have also incorporated a PCAP (projected capacitive) touchscreen.

PCAP multi-touch touchscreen technology is widely used today in cellphones and tablets, and our technology is similar, but improved. For example, to minimize reflections, we apply the front filter glass (with PCAP touchscreen) to the LCD using optical bonding techniques.

Q: What are your key technologies for aux support displays?

A: Aux support displays are intended to be placed next to the main radar display, displaying auxiliary data, which means their main requirement is a good systems integration with the main radar display, good color consistency between the screens, and well-considered mechanical integration.

For example, our ADP361/3 aux support display is designed for good integration with a MDP471/4 display. A controller working position (CWP) with one 2Kx2K main screen, and left and right an ADP361/3 in portrait mode, can be color-calibrated with the sensor and software, which we also provide.

ScioTeq also recommends some products from our partner NEC, which we certify for 24/7 usage in ATC environment, and which are also compatible with our color calibration software.

MORE THAN 80 YEARS OF INNOVATION

ScioTeq has its headquarters in Kortrijk, Belgium and has facilities for sales & marketing, customer support, R&D and manufacturing in Europe, North America and Asia Pacific regions.

ScioTeq's previous brand, Barco was founded in 1934 in Poperinge, Belgium – indeed Barco was an acronym for Belgian American Radio Corporation, a name selected as company founder, Lucien de Puydt's initial business was assembling radios from parts imported from the USA.

In 1941, following the death of de Puydt, radio pioneer Camiel Descamps, together with his wife and brother-in-law, grew the company and spread around 90 countries across the globe. Over the years Barco has developed everything from the first multi-standard television, to jukeboxes, color TVs, TV monitors to broadcasters, mechanical components for industrial use, quality control monitoring for the textile and plastics industries, transistor-based portable TVs, CRT projectors for airplanes, projection technology for IBM, Apple and Hewlett-Packard, LCD, LED, DLP and LCoS technology, cinema projectors, and of course ATC displays.

The low lifecycle cost equation for aux support displays is more challenging. Some customers prefer to use our product, at a slightly higher initial cost than standard commercial displays, which will remain in service for many years; some other customers prefer using standard commercial displays, which may need replacing every two or three years.

Q: What is ScioTeq's best-selling ATC technology?

A: Our flagship product remains the square 28in 2Kx2K main radar display: the MDP471/4, which is now in its fourth generation. We have offered and developed this product for more than 20 years.

Q: What technologies are currently in development at ScioTeq?

A: A prototype of our most recent development, the 'MDP843 Plus', was shown at ATCA last year. We are particularly proud of our achievement in bringing the image quality level of the 43in 4Kx2K display to the same level as the 28in 2Kx2K LCD. Due to our optical expertise, we are able to do improvements in the optical stack of backlight, LCD and bonded front glass. The MDP843 Plus is due to be released for mass production later this year.

We have also developed a new MDP832 32in 4Kx2K display, with all the same features as the MDP843, which is targeted for both tower and en-route ATC use. The display has the same PCAP multi-touch technology as the 24in TCD361, with high brightness, bonded front glass, and a high-end front glass. A prototype was also shown last year at ATCA, and this product also goes into mass production later this year.

On the display back-end, we are adding capabilities to support flexible multi-window layouts on the 4Kx2K screen, and for managing the full user interface. Up to four video inputs can be shown simultaneously on the screen, in a user-configurable layout.

Q: What are ScioTeq's corporate plans for the future?

With more than a 20-year track record in the ATC market, ScioTeq has the clear vision to remain the leading visualization player in the ATC market for at least another 20 years.

We have a majority market share position in the ATC sector worldwide, a position we wish to expand on by making focused investments in state-of-the-art ATC market products, serving our customers' specific needs while at the same time providing maximum added value. ❖