

Authenticating Everything from Fuel to Banknotes – an Interview with Dr Tim Driscoll



Readers of Authentication & Brand News™ (ABN) will most likely be aware of Texas-based Authentix's work with national governments providing fuel marking services (see ABN June 2022), but perhaps you're not so familiar with their other activities in protecting brands and securing documents.

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To find out more about the company's broad range of authentication expertise, ABN felt it would be timely to sit down with newly appointed Chief Technology Officer (CTO), Dr Tim Driscoll, to learn more.

The company was founded in 2003, with the merger of Isotag and Biocode. Two years later, Dr Driscoll joined Authentix as Vice President of Global Operations, and advanced to an executive role and a key leader for the company. In his new role as CTO, he will direct all research, innovation, and new product development.

Q: Hello, Tim, and thank you for reaching out to the ABN readership. Perhaps, I can start out by asking you about your early life and upbringing?

A: Certainly. I grew up just north of Boston in Wakefield, Massachusetts. The end of our street ran into Lake Quannapowitt which provided for endless activities such as catching turtles, fishing, sailing, building forts in the swamps and ice skating.

At a young age, I became very interested in sports and science. After seeing limited career options in street hockey, I chose to focus on physics.

Q: You studied and conducted research in physics up to post-doctoral level. Was the research anything to do with authentication or document security?

A: My graduate physics studies concentrated on nonlinear optics and laser science. At the heart of these investigations were often materials with novel optical properties.

While at Brown University in a research group led by Nabil Lawandy, current CEO of Spectra Systems, one of the graduate students discovered a class of materials that had very distinctive optical properties under specialized illumination conditions. While completing the post doctorate, several patents were obtained, and applications were identified over a wide range of fields, including anti-counterfeiting, photodynamic therapy for cancer treatment, and Identification Friend or Foe military applications.

After finishing the post doctorate and returning to the US, I became the fourth employee of Spectra Science, a Rhode Island-based company that had licensed the patents from Brown. Spectra Science was soon renamed as Spectra Systems, and I was there for 10 years before joining Authentix.

Q: In your almost twenty years with the company, you must have witnessed a lot of changes in the authentication market. What do you see as the biggest shifts and how has Authentix adapted to them?

While I wish I had been in authentication for only 20 years, it is closer to 30! Two main changes come to mind over this period.

The first shift is how the authentication industry has evolved from providing single point technologies to offering program-based authentication solutions to address the needs of the clients.

The second change, which is very much a part of the previously described shift, is the growing importance of track and trace and AI-driven digital authentication solutions.

As clients began adopting and benefiting from program-based solutions, they also quickly realized how the generated insights, combined with their deep understanding of their supply chains, could increase the program gains. Track and trace solutions, which provide for the authentication of the track and trace mark, are proving to be the most efficient approach to gathering these insights.

Q: With your remit to 'direct all research, innovation, and new product development,' you must be torn between a whole range of global priorities, opportunities and risks. How do you manage them all?

A: We are fortunate to have a lot of intelligent and creative employees throughout the company and around the globe. My plan to support and foster innovation will be to promote our key projects both inside and outside of the company. For each project I will determine how best to assist.

In some cases, it will be to support the group by removing roadblocks for other projects that are a good match to my skills and capabilities. I will also contribute directly to the solution development.

Q: In researching the company before this interview, I realised that Authentix is more involved in securing banknotes than I would have thought. Without giving away any sensitive information, can you say a little about that side of the business?

A: Since 2007, Authentix has been a provider of Level 3 features and high-speed sensors for authentication and banknote fitness to industry leading central banks. Our central bank features are on more than 27 currency denominations and over 550 high speed Bright™ sensors are in use in central bank cash rooms and high security printworks.

Presently, we are in the final stages of development of a CDI2-compliant camera sensor and fitness solution as well as a CDI2-compliant authentication sensor as part of the US Federal Reserve's next generation processing environment.

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T-shirts, Stamps and Gold *(continued)*

In this example, authenticity (confirming the item you are buying is indeed that pop star's T-shirt) and provenance (confirming the item was worn on that occasion) has been very difficult to prove. With this technology, a celebrity or influencer can wear an item, take a photograph of themselves wearing it, and attach the photo to the database entry for that item. Any attempt to replace it for a seemingly identical T-shirt would be noticed.

Good as gold

While FeaturePrint is well suited to the new worlds of distributed ledgers and NFTs, it is equally at home with old-world bars of gold. Counterfeit and illegal bullion is a problem that continues to grow, with misled and uninformed dealers requesting greater track, trace, and authentication tools.

In October 2022, Alitheon signed a letter of intent with blockchain-based platform aXedras to link and integrate its FeaturePrint technology into aXedras' blockchain-backed Bullion Integrity Ledger™. The aXedras solution is the underlying data platform ensuring data and product integrity in the bullion market along the value chain of precious metals.

The aXedras solution refers and connects to security feature technologies used by refiners to enable vaults and investors to verify the authenticity of their precious metals under custody. Connecting FeaturePrint to the aXedras solution was a logical step to provide seamless authenticity verification processes for bars along the chain of custody, creating an additional layer of trust.

'Connecting security feature providers like Alitheon to our Bullion Integrity Ledger provides a one-stop solution to market players along the value chain for product integrity including streamlined authenticity verification,' said Urs Rösli, CEO of aXedras.

Authenticating Everything from Fuel to Banknotes *(continued)*

Q: *I'm familiar with Authentix's activities in securing physical tax stamps against fraud, but does the company also offer traceability, enforcement, and reporting for excise tax collection?*

A: We do. Through our TransAct™ management information system and our security print capabilities, we provide the complete solution for a fiscal marking and production monitoring program.

Our capabilities include digital tax stamps as well as direct-to-product secure barcodes to fight tax evasion. Our offering includes mobile apps for inspectors, supply chain entities and the public, which can digitally authenticate the marking and extract the relevant track and trace information.

Many of the elements of the solution set that support the recovery of taxes are found within our DigiTrax™ offering for brand owners. Stakeholder authorization and registration, code generation and issuance, and flexible and client-configurable reports and dashboards are critical elements of both our tax recovery and brand integrity offerings.

Q: *There is a general sense, in the brand protection market, that business activity is shifting from physical to digital and that the future will be virtual in the metaverse. Does Authentix share that view?*

A: We share this view and also see this trend. We have been supporting digital and software enablement since our first implementation of a track and trace solution in 2007 to help a global beauty products company address diversion of their products to unlicensed retailers.

Today, we continue to support dozens of major brands utilizing track and trace as well as enabling our clients to engage directly with their loyal consumers in the process.

We will continue to focus on investing in the expansion of our digital platforms to

support our customer's growing needs for authentication solutions.

Q: *Authentix has been active on the acquisitions trail recently (2019 – Security Print Solutions Limited, 2020 – Traceless Authentication Group, 2021 – Strategic IP Information Pte Ltd). Has this relatively rapid expansion affected the culture of the organisation?*

A: As these acquisitions have quickly increased the size and reach of Authentix, they have absolutely had a very positive impact on our culture.

In acquiring any company, we place a high value on an organization's existing culture and how this aligns with our cultural values of integrity, ethics, innovative spirit, and serving as a trusted partner to clients.

Each of these acquired organizations has also contributed to the Authentix culture by providing new insights into the products and services created and the unique needs of clients that they support. This has served to further strengthen our collaborative nature which is focused on using science and technology to address the needs of our clients.

I would also add that while we were acquiring these companies, we were also bringing new people into the organization and creating regional offices in Zambia, Ghana, Riyadh, and Islamabad. These expansions had a similar positive effect by increasing the diversity of our employee base and strengthening shared experiences.

Q: *What would you wish to be doing in 10 years' time, and what do you think you'll be doing?*

A: Reflecting on an enjoyable career in authentication and taking solace that others were helping companies and governments deter illicit activity while I'm spending more time outdoors and traveling.

