

Authentix – Positioned as a Multi Service Solutions Provider for Currency and Beyond

Last month, the uncertainty over the future of the authentication business of Meta Materials was resolved by the acquisition of its assets by Authentix. This is the latest in a string of acquisitions that has seen Authentix grow from its early days as a developer of taggants for fuel integrity programmes to a full service and solutions provider to the banknote industry of covert technologies, sensors, overt features, security print and design.

Currency News™ spoke to Kevin McKenna, CEO of Authentix, about the company's history, capabilities and strategy for consolidating and expanding its position in the currency and other sectors.



Q: *First of all, can you give some personal background?*

A: I started my career as an officer in the US Army, where I served for seven years as a helicopter pilot. I entered the civilian workforce in 1999, with IBM Global Services as a business development professional. I left IBM in 2003 and served in a variety of progressive leadership roles in technology, security, and risk management sectors. In 2012, I left HID Global as VP of Government ID for the Americas and joined Authentix. I served in a variety of executive positions at Authentix prior to becoming CEO in May 2018.

Q: *And now some background to Authentix?*

A: Authentix has a rich history that began in the 1990s. It was initially formed as Biocode, which became independent from Royal Dutch Shell in 1992. In 1996, Isotag was formed by acquiring technology developed by Los Alamos National Labs in the US. In November 2003, Authentix was officially established through the merger of Isotag and Biocode. The early 2000s saw additional acquisitions to augment Authentix's technology portfolio, especially in security ink and packaging expertise. In 2008, Authentix was purchased by

an investment group led by The Carlyle Group and JH Whitney, Inc, which enabled the company to continue its growth strategy. In September 2017, Authentix was acquired by Bluewater, a global private equity firm specialising in energy transition and industrial supply chains, further solidifying its position as a leader in authentication solutions.

Since the Bluewater acquisition, Authentix has made five acquisitions to strengthen its authentication and information systems portfolio to serve governments, central banks, and commercial owners.

We are headquartered in Texas, and today there are over 575 Authentix employees serving our customers on six continents to ensure the integrity of products and global commerce.

Q: *With reference to those acquisitions, what were they and what was/is the strategy behind them?*

A: They include Security Print Solutions in 2019, Traceless Security (a former division of Kodak) in 2020, Strategic IP Information (SIPI online brand protection) in 2021, Royal Joh Enschedé in 2023, and this most recent acquisition of the assets of Nanotech Security Corp in July 2024.

Our approach to these acquisitions has consistently been guided by three main objectives:

1. Increasing our clients' access to an expanding technology offering in the authentication and security printing industry
2. Bringing the industry's top technical and business development experts onto the Authentix technical and sales consultation teams, and
3. Diversifying our business and growing our market share and venturing into new markets and geographies.

Q: *What percentage of your business is derived from banknotes versus the other sectors in which you operate (fuel integrity, tax stamps, brand protection, others)?*

A: As you know, Authentix is a private company and does not publicly disclose any specific financial details. However, what I can tell you is we have a well-

diversified business in physical brand protection, online and digital brand protection, high security document printing, branded fuel integrity, government fuel protection programs, government fiscal marking and excise tax optimization, and our currency and banknote business with major central banks.

In the currency and banknote sector, we hold significant market share with a diversified offering of high-speed authentication and fitness sensors, multiple overt and covert authentication features for banknotes, and partnerships with other complementary providers for combined technology solutions as well.

Q: *What specifically is your offering to currency issuers? Can you describe your portfolio?*

A: We have a strong and diversified offering in the currency business.

Jewel™, for example, is our Level 3 covert authentication solution, which includes customizable, signature based taggant materials, Jewel high speed sensors for used note and single note inspection, and online and offline QC systems. Jewel can be added into paper, polymer or composite substrates or applied by several different printing methods.

Our GemVision™ high speed imaging sensors are built upon the new Common Detection Interface 2 (CDI2) standard, first released in 2016 by the European Central Bank in collaboration with the US Federal Reserve. CDI2 was created to standardize the integration of sensors onto high speed sorters with a particular focus on the requirements for the hardware responsible for determining note fitness.

And we have a strong lineup of overt solutions based upon next generation nano optics for currency and other lines of business.

They include QUANTUM® stripe, launched last year, which offers motion and colour change based on nano-structures, ie. without the need for inks or lenses. We also offer QUANTUM® thread.

Another product is LumaChrome®, which is a colour shift feature – similar to optically variable ink but without the ink since, again, it is based on nano-structures within the film.

LiveOptik™ is more of a traditional optically variable device (OVD), which looks like a hologram but, again, isn't. It offers both colour shift and motion effects.

We also offer Nano® protect and PICO™ secure.

Additionally, we offer specialized banknote design services drawing on the extensive knowledge and history of Royal Joh Enschedé in the Netherlands, which boasts centuries of experience in secure banknote design and printing.

Q: *How do you market your products for currency? Do you sell/work directly with end users (ie. central banks) versus integrators (ie. printers) versus feature or substrate suppliers?*

A: We work directly with many central banks around the world. When it makes sense for the benefit of the currency issuer, we also have worked with selected integrators and partners on particular projects.

Q: *Going back to CDI2, to what extent is this a gamechanger in the currency business?*

A: As noted, the Common Detector Interface 2 (CDI2) is a standard for banknote sorting machines and detectors, set by the US Federal Reserve and European Central Bank. It enables faster and more accurate detection of banknote features and fitness. It also provides central banks with direct control regarding how their notes are sorted and provides them unprecedented access to the data that is behind the fitness determination.

In 2018, Authentix was contracted by the Federal Reserve Financial Services to design and manufacture CDI2 compliant detectors, including a Camera System and Fitness solution. Authentix, with its main partner Boulder Imaging, Inc, a machine vision and inspection company, has delivered the project on time. We are already manufacturing CDI2 sensor production units, and they will be rolled out over the next several years, dependent on the Fed's larger rollout schedule and upgrades to sorting equipment and facilities.

The CDI2 standard gives more access to banknote data and images during high-speed processing. The standard also allows central banks to choose their detectors from multiple suppliers. The CDI2 standard is expected to be adopted by most central banks in the next few years and will provide more control and flexibility for banknote processing.

The CDI2 compliant detectors from Authentix will also improve the efficiency and longevity of banknotes by making smarter sorting decisions. This helps to reduce the cost and carbon footprint of cash by keeping more notes in circulation.

Q: *Moving specifically to Meta Materials now, or rather, Nanotech, what attracted you in particular about the company (other than the price!)?*

A: We had already become familiar with the technology of Nanotech Security Corp (NSC) prior to its acquisition by Meta Materials in 2021 and found this nano optic technology platform to be quite impressive. We had previously (and recently) worked with NSC in technology partnership development projects and potential integration opportunities in both

currency and brand protection prior to our acquisition of its assets last month.

Q: *Do you feel offering physical (overt) features alongside your existing portfolio is important for the company going forward?*

A: Yes, Authentix is a full turnkey solution provider in all of the markets we serve. Bringing in the next generation of nano optic overt technology continues to put us as the leader in technology innovation for the currency and brand protection markets.

Q: *How will you be branding and integrating the company going forward?*

A: All communication and product-related matters will be transacted under the overarching Authentix brand. This approach ensures a unified and cohesive brand identity, qualifications, experience, and simplifies communication by reinforcing our market position as a comprehensive provider of innovative authentication solutions.

It has been our strategy for all our acquisitions, unless there is a very good reason not to. The name Royal Joh Enschede has been retained, for example, because of the strength of the name in the currency world and its 300-plus years of history.

Q: *Are there opportunities to offer features that combine NSC's technology with that of Authentix? If so, what and how?*

A: Yes, the integration of NSC's nano optic technology capabilities into the wider Authentix business perfectly complements the organization's strategic focus on bringing the most innovative security solutions to the industry. The acquired legacy of expertise in nano optics and colour-shifting materials offers advanced Level 1 security features that are critical for anti-counterfeiting measures. By integrating technologies such as QUANTUM stripe, LumaChrome, and LiveOptik to Authentix's wider security portfolio, we can materially enhance both the visual and covert security features of banknotes, ensuring the continued success of our customers and maintaining their confidence and trust.

Also, one of many distinguishing capabilities of our fitness sensor lineup is the ability to detect and assess the fitness level of Level 1 features. The novel optical responses of features within the acquired nano optic platform are well suited for such detection and robust authentication when combined with our high-speed sensor capabilities.

Q: *What do you see as your key strengths/USPs in the market?*

A: Our commitment to making our customers successful, part of which is bringing together the right technology for their needs, whether it's from Authentix or not. We have built or acquired significant expertise over the last 30 years and truly

understand what our customers want.

Q: *You mentioned earlier how your CDI2-compliant detectors will help reduce the costs and carbon footprint of cash. Looking at sustainability more generally, how important is this in your business.?*

A: Very. Not least because we are owned by Bluewater, who are leaders in energy efficiency, decarbonisation, digitalisation and security. We have detailed ESG policies and reports, and are working across all areas of the E, the S and the G. Regarding the 'E', the environment, we are actively working with national governments and commercial companies to reduce toxic pollutants that harm air quality and contribute to climate change. Our national fuel integrity programs, for example, use clean, non-halogen and metal free markers to authenticate product, resulting in up to a 30% improvement in national air quality due to elimination of illicit and toxic fuel adulterants.

Maintaining our system for environmental stewardship including responsible waste reduction and proper hazardous waste removal is in accordance with the Texas Commission on Environmental Quality, and we also have a Diminishing Manufacturing Sources and Material Shortages Mitigation Policy for our supply chain.

We are regularly improving facilities, processes, and supply chains to manage adverse ecological impacts while providing innovative solutions for our customers to accomplish similar goals. Our UK-based secure print facilities are now powered by 100% renewable energy sources for electricity through biomass and wind power. These sites plan to achieve carbon neutrality by 2030 with contributions to carbon offsetting schemes via Carbon Neutral Britain and Forest Carbon.

Q: *Given the move to digitisation, and your strengths in this area, isn't buying a materials company a retrograde step?*

A: It's true we have a strong and growing business in secure track and trace solutions, digital consumer engagement and authentication, and a growing and dedicated business division devoted to protecting online brands and licensed goods in the e-commerce marketplaces. In that respect, we are developing and will continue to acquire additional digital technology platforms where appropriate. However, we expect to continue growing our business protecting physically merchandised products such as pharmaceuticals, spirits, wine, electronics, apparel and footwear, luxury goods, banknotes, fuels, foods, and highly taxed consumer products where governments need physical tracking and authentication solutions for excise control.

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AI: a Practical Bootcamp

Currency Research has launched the AI Bootcamp, facilitated by The Centre for Alternative Finance at the University of Cambridge Judge Business School, which will explore AI tools and strategies for revolutionising supervisory innovation, with practical insights and a tailored roadmap for AI adoption.

Key topics include

- AI fundamentals: machine learning, natural language processing, and more
- Ethical considerations and public-private partnerships in AI
- Practical case study: Python programming and AI data analysis
- Designing and optimizing AI implementations
- Developing strategies for AI adoption and digital transformation.

This session will be of interest to organisations seeking to understand the implications, benefits and potential challenges the AI revolution could provide to their sector as well as bring attendees up to speed on areas of global debate in the AI currently.

This AI Bootcamp series is offered at the following Currency Research events:

- In London, Wednesday, September 25th during Payments, Innovation & Technology Week
- In New Orleans, Monday, November 4th during the Americas Cash Cycle & Payments Seminar
- In Cape Town, Tuesday, November 26th during the EMEA Cash Cycle (ICCOS) & Payments Seminar

Participation in the workshop is complimentary for those registering for any one of the above events or 100£/\$/€ for those wanting to attend the workshop only.

... Currency and Beyond

As the global population has grown, the need for these physical products has also grown. The branded and premium products in these sectors, as well as currency, will continue be targets of fraud and can wreak havoc on market share, safety, consumer loyalty, and public trust.

Having a full complement of solution choices increases options available to our clients for protecting different products, market sectors, and geographies using a multitude of technology solutions. We feel this is the best way to ensure our customers' success.

Q: *Crane has recently bought OpSec, diversifying its product offerings in both currency and product protection. Did this influence your decision to buy Meta? Is this diversification trend market or product driven?*

A: We acquired the assets of NSC to support our commitment to innovation, growth, and making our customers successful. It will strengthen our position as a global leader in authentication solutions and open new opportunities for us to serve our existing and potential customers.

The technologies we have acquired are at the cutting edge of innovation, with a wide range of applications across various industries. With respect to the currency sector, we have acquired the world's first fully animated nano optic banknote security product (ie. QUANTUM). This product offers a unique combination of visual cues that can help central banks and governments protect their currencies from counterfeiting and enhance public trust.

Q: *To what extent do you need to become a software business, given the sectors you are in?*

A: Authentix is already a software solutions provider in several markets including fuel integrity, fuel quality, brand protection, and tax stamp programs. In fact, in 2002, Authentix developed one of the world's first SaaS based web platforms for product sampling, giving our customers direct access to the platform with real-time reports and results.

Since then, we've developed multiple customer web-based software platforms such as AXIS® (Fuel Marking and Supply Chain database), DigiTrax™ (Brand Protection Track and Trace), QualiTrax™ (Portable Fuel Quality Machine Learning Solution), TransAct™ (National Turnkey Excise Tax and Production Control solution), and BrandTrax™ (online brand and license protection and enforcement solution).

Additionally, we've developed multiple mobile smartphone applications that interface directly with our software and other field devices. We've always known that we live in a data driven world and the insights provided by our software and data reporting improves our

customers' decision making and reaction time to detect and solve key problems.

Q: *Where do you see the growth for the company coming from – currency or product/brand?*

A: We see strong growth opportunities across governments, central banks, commercial customers. Our customers in these sectors are faced with increasing complexity in supply chains due to globalization and growth of digital channels and tools that threaten the integrity of products and commerce.

Q: *What do you think will be the key developments in currency over the next 10 years, and in your particular area?*

A: Over the next 10 years, the currency sector is likely to experience significant developments driven by technological advancements and evolving market needs and threats. We expect that key developments may include:

- **Enhanced security features:** as counterfeiting techniques become more sophisticated, there will be a continuous need for innovative security features that are difficult to replicate, yet easy to recognize and authenticate. This could involve advanced materials, unique identifiers, and integration of digital technologies.

- **Digital currency integration:** with the rise of digital transactions, there may be a greater push towards integrating physical currency with digital platforms, possibly leading to hybrid solutions that bridge the gap between cash and digital payments.

- **Sustainability:** environmental concerns may drive the development of more sustainable materials for currency production, reducing the ecological footprint of banknotes and coins. This will also include the continuation of the current trend towards smaller banknotes, which will further increase the need for security features with robust aesthetic and functional properties.

- **Globalization of currency security:**

as the global economy becomes more interconnected, there may be efforts to standardize security features across different currencies to facilitate easier verification and reduce fraud on an international scale.

We believe that our portfolio is well positioned and ready to fully support the needs of central banks over the next 10 years.

With our expertise spanning overt, covert, and digital authentication solutions offerings, we look to play a pivotal role in these developments, leveraging technological capabilities to meet the evolving demands of the currency market.

The company's history of innovation and strategic partnerships positions it well to contribute to and benefit from these future trends.