Optimising construction product data management with GS1 standards

Achieving the "golden thread"

The Electrical Distributors Association is the trade association for UK wholesalers of electrotechnical products, a key sub-sector of the construction industry. The association has four "pillars" of activity: business community, industry insight, training and digitalisation.

The digitalisation activities were introduced in 2016 to help wholesalers adapt to the digital world and move their businesses towards a more multichannel sales approach, combining the convenience of online sales with traditional values such as personal service and product knowledge.

The primary goal was to tackle one of the key blockers to digitalisation in the sector: availability of rich, good quality and ecommerce-friendly product data, preferably sourced directly from manufacturers. This has been addressed, firstly by the introduction of an international standard (European Technical Information Model) for technical product data, followed by development of a central "data pool," EDATA, into which manufacturers upload their product data to be accessed by wholesalers and integrated into their business systems.

The need to integrate the data revealed a pressing need for a universal, system-agnostic means to identify products, enabling product data to be passed seamlessly between stakeholders and from system to system. Having looked at the options available and spoken in depth to GS1 UK, the EDA agreed that the Global Trade Item Number (GTIN) was the best available solution.

While there have been a few challenges, notably advising manufacturers on correct, best-practice GTIN application, there is no doubt that the project has been a success. Using GTINs has enabled more rapid and more effective integration with a wholesaler's ERP system and enabled development of additional services such as the data sheet feature.

In future, adoption of the GTIN will enable data to be transferred from wholesalers' systems to contractors and client organisations, and enable electrotechnical wholesalers to play a key part in achieving the "golden thread" of construction product information.

Margaret Fitzsimons
CEO
EDA

Driving digital transformation in construction

At GS1 UK, we are committed to driving innovation through standards that enhance efficiency and transparency across supply chains.

In this context, our standards—especially the Global Trade Item Number (GTIN)—will be pivotal in shaping the future of construction.

The construction sector is undergoing a significant digital transformation. At the heart of this evolution is the need for accurate, consistent and interoperable product data.

The adoption of the GTIN within the EDATA platform marks a crucial step forward in solving one of the industry's long-standing challenges—ensuring that product information can be shared seamlessly across the entire supply chain.

By providing a common language for identifying and exchanging data, GS1 standards help businesses improve traceability, enhance efficiency and meet growing regulatory demands.

Through our collaboration with the Electrical Distributors' Association (EDA), we have seen first-hand how standardised product identification is driving tangible results for manufacturers, wholesalers, contractors and beyond.

GTIN integration has enabled smoother data exchange, reduced inefficiencies and provided greater transparency—key factors in supporting the industry's drive towards the "golden thread" of product information.

As the construction sector continues to embrace digitalisation, the importance of open, interoperable standards will only grow.

I look forward to seeing the continued impact of this collaboration and the role that GS1 standards will play in enhancing transparency, efficiency and decision making across the sector.

Anne Godfrey
CEO
GS1 UK

The product data challenge

The construction industry is a highly complex sector that involves a wide range of activities. With a broad range of stakeholders including architects, engineers, contractors, wholesalers and manufacturers, the effective management and exchange of product data is critical for ensuring smooth operations.

In this fragmented environment, construction professionals need accurate, consistent, and up-to-date information on the materials and equipment they are using in their projects. This information includes everything from technical specifications and safety data to product availability and pricing.

However, the construction industry has traditionally struggled with fragmented and inconsistent product data. Manufacturers, distributors and contractors often use their own internal systems to manage product information, which can lead to discrepancies when trying to integrate data from different sources.

Without a unified approach to product identification and data sharing, the risk of errors and delays increases, leading to inefficiencies and potential safety issues in the supply chain.

EDA: facing the challenge head-on

One organisation that has faced these challenges head-on is the Electrical Distributors' Association (EDA), which represents wholesalers of electrotechnical products in the UK.

The EDA manages a data pool called EDATA, which holds high-quality product data sourced from electrotechnical manufacturers.

This data is a valuable resource for wholesalers, contractors and other stakeholders. It enables them to access detailed product specifications and generate important documentation such as datasheets for quotations and O&M manuals. However, for this data to be used effectively across different systems, it needed to be mapped consistently to wholesalers' internal stock files. This often proved difficult due to inconsistent identification methods, particularly with manufacturers' part numbers.

For many years, wholesalers used their own customised part numbers for products, which made it difficult to map product data between different systems. Attempts to integrate data from the EDATA platform with wholesalers' internal systems were limited by these discrepancies.

A major bottleneck was the process of generating product datasheets—a crucial component for supporting the "golden thread" of product information.

The datasheets, which are needed for quotations, project submittals, and O&M manuals, could not be generated reliably due to the lack of a standardised, unique product identifier.

The benefits of GS1 standards in construction

Sustainability and traceability

GS1 standards create more efficient information flows with greater transparency through the value chain.

Comply with legislation

GS1 standards help businesses meet challenging regulatory and industry demands, providing increased security and trust, regardless of where you sit in the supply chain.

Digitisation and automation

GS1 standards enable the digital sharing of interoperable data. Having full control over delivery and distribution saves time and reduces costs.

Mapping challenges and manual workflows

One of the primary challenges that EDA faced before implementing GS1 standards was the difficulty of effectively mapping product data across multiple systems. EDATA housed rich, detailed product information, but wholesalers were unable to link this data easily to their own stock files. Wholesalers had to rely on the manufacturers' part numbers to match products, but these part numbers were often inconsistent. Some wholesalers customised these numbers to fit their own systems, while others used part numbers that were duplicates or prone to errors. As a result, the process of matching product data between EDATA and wholesalers' stock files was a cumbersome and error-prone task.

This issue was particularly problematic for the EDATA platform's datasheet generation functionality. The datasheets, which are critical for contractors, project managers and other stakeholders, are built from the data available in the EDATA platform. To generate a datasheet, a unique product identifier is required to call the correct data from the platform. So, without a consistent, reliable identifier, wholesalers were unable to generate accurate datasheets quickly. This not only led to delays, it also created the potential for errors in the documentation which could have serious consequences for construction projects.

Additionally, the absence of a standardised product identifier meant that wholesalers had to conduct manual searches for product information or manually map product data to their internal systems. This process was time-consuming and inefficient, particularly in a high-pressure sales environment where speed and accuracy are essential. The lack of a unique identifier also led to difficulties in communicating product information across the supply chain, as stakeholders used different naming conventions and part numbers for the same products.

"Adopting the GTIN represents a key milestone in improving efficiency and transparency across the construction supply chain. A unified, industry-wide approach to product identification will deliver greater data accuracy, better traceability and seamless digital integration for all. As digital transformation in construction continues at pace, this will be critical. Not only for supporting regulatory compliance but also for driving sustainability and safer working practices across the sector."

Shervin Yousefzadeh, head of construction, GS1 UK

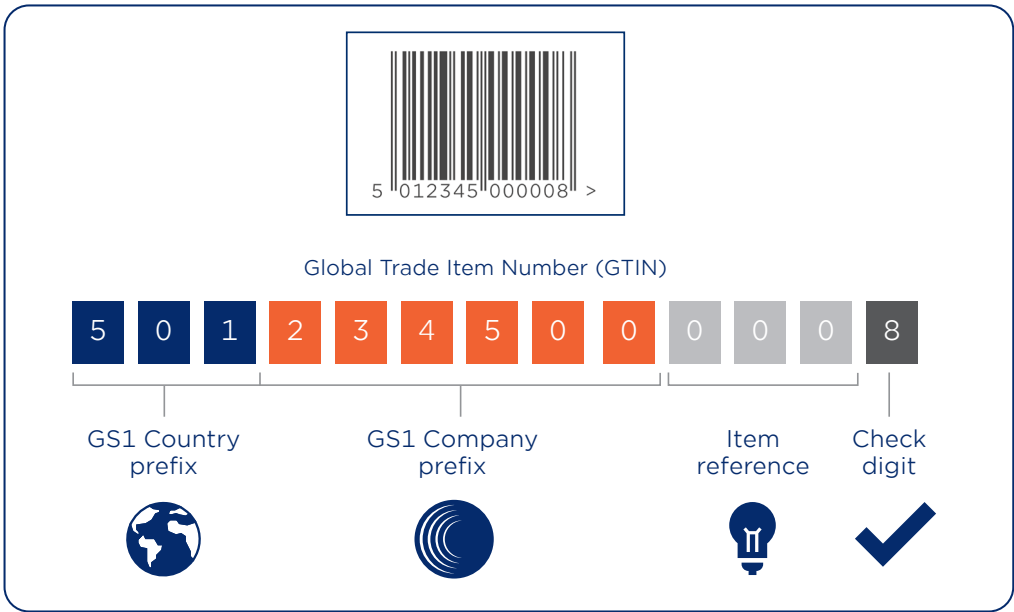# Identifying the solution: Global Trade Item Numbers

Recognising the inefficiencies and limitations of their existing data management processes, EDA set out to find a solution that would enable wholesalers to access accurate product information more easily, generate datasheets more efficiently and ensure smoother data exchange across systems. After exploring several options, EDA decided that adopting the Global Trade Item Number (GTIN) from GS1 UK was the ideal solution.

The GTIN is a globally recognised product identifier that can be used to uniquely identify products, regardless of the manufacturer or distributor. Over the past 50 years, the use of GTINs—especially in product barcodes—has become standard across many industries including retail, logistics and healthcare.

By adopting GTINs, EDA could ensure that all product data within the EDATA pool would be mapped to a unique, standardised identifier which could be used by wholesalers, contractors and other stakeholders to easily access product information across different systems.

One of the key advantages of the GTIN was its global recognition. Many manufacturers, particularly multinational companies, were already using GTINs to identify their products. This meant that EDA could easily integrate product data from these manufacturers into the EDATA pool without requiring them to make significant changes to their systems. Since the GTIN is already widely adopted and supported by a range of software providers, it was technology-agnostic, making it easier for wholesalers and contractors to integrate with their own systems.

The use of GTINs also offered a cost-effective solution for manufacturers. As a non-profit organisation, EDA wanted to avoid creating an entirely new product identification system as this would impose additional costs. Instead, EDA was able to provide a low-cost solution that could be easily implemented across the supply chain, benefiting all parties.

Global Trade Item Number (GTIN)

| 5 | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 8 |

GS1 Country prefix   GS1 Company prefix   Item reference   Check digit

The power of GTIN

The use of GS1 standards is essential if stakeholders are to effectively capture, identify and share information across the supply chain.

One such standard, the Global Trade Item Number (GTIN), can play a vital role by both uniquely identifying any physical product, and capturing the necessary data surrounding it.

As a result, the GTIN is a fundamental building block for driving efficiency in the procurement and management of materials, throughout construction processes and during maintenance or repair.

By encoding GTIN information into scannable barcodes or radio frequency identification (RFID) tags and applying them to building products, stakeholders can ensure access to consistent, accurate, and trusted data at every step of the supply chain.

GS1 standards are fully interoperable, allowing information to be shared seamlessly between trading partners. This brings increased visibility, traceability, and certainty to building and asset information.

Implementation and integration

Once the decision to implement GTINs was made, EDA began the process of integrating them into the EDATA platform. This involved mapping the existing product data to GTINs, ensuring that each product in the data pool was linked to a unique identifier. EDA worked closely with software providers and wholesalers to ensure that the transition was as seamless as possible.

The adoption of GTINs allowed wholesalers to integrate API technology into their systems, enabling them to retrieve product data from EDATA in real time. When a wholesaler needed product information, they could request it from EDATA using the GTIN. This request would trigger EDATA to pull the relevant product data, which would then be made available to the wholesaler's system. This eliminated the need for wholesalers to manually search for product information or deal with inconsistent part numbers, significantly improving the efficiency and accuracy of data retrieval.

One of the most important features enabled by the use of GTINs was the ability to generate product datasheets quickly and accurately. With the unique product identifier in place, wholesalers could now generate datasheets with ease. To create a datasheet, the wholesaler simply needed to build a URL containing the GTIN, their customer ID and the product details.

This URL would trigger EDATA to generate and download the relevant datasheet. The process was simple, efficient and highly accurate, which significantly improved the speed and accuracy of quoting, project submittals, and O&M manual generation.

The platform supports a range of data exchange formats, including BMEcat, which is used for exchanging product information between different systems.

EDA also plans to incorporate ETIM xChange, which also holds the GTIN, in the near future. This will allow for seamless data exchange between systems using the ETIM classification standard. These additional standards help ensure that EDATA can accommodate a variety of different formats and requirements, making it a flexible and scalable solution for the industry.

Aurora AU-R62CWSFFH
Aurora Adjustable R6™CWS Fire Rated CRI90 Downlight with FastRFix

| Master Data | ETIM | Assets | Packaging | Sustainability |

Manufacturer:	Aurora Lighting UK
Part number:	AU-R62CWSFFH
Alt. Part Number:	-
Brand:	Aurora
Family:	Luminaires
Range:	Fire Rated Downlights
GTIN:	**5056102052688**
Manufacturer ID DUNS:	237970046

GS1 standards in construction

There are a range of different GS1 standards for powering digital transformation in construction. These include:

Global Trade Item Number (GTIN)

The GTIN, the number you typically see under barcodes, is used to uniquely identify billions of products around the world. Whether in store, online or on site, they provide an accurate and efficient way to access and share information about a product.

Global Location Number (GLN)

A unique number that is assigned to parties and locations to enable them to be identified uniquely worldwide. They provide a single method for location identification for all companies in the supply chain, removing the risk of unnecessary costs and errors.

Serial Shipping Container Code (SSCC)

Can be used by companies to identify a logistic unit enabling them to be tracked and traced throughout the supply chain. Logistics units can be any combination of trade items packaged together for storage and/or transport purposes; for example a case, pallet or parcel.

EAN-13, EAN-8, ITF-14 and GS1-128

These types of barcodes play a key role in supply chains, enabling industry to automatically identify and track products as they move through the supply chain.

QR codes powered by GS1

Creates a direct link between physical items and their digital counterparts, enabling seamless tracking, authentication and data sharing of materials and assets across the supply chain.

GS1 DataMatrix

For barcoding products with 2D codes to hold more information about a product.

Global Individual Asset Identifier (GIAI)

For uniquely identifying and recording individual assets such as air handling units, boilers, and plant equipment throughout their lifecycle, from procurement and maintenance to upgrades and decommissions.

To discover more about GS1 standards, please visit gs1uk.org/standards.

Overcoming barriers to adoption

While the benefits of implementing GTINs and GS1 standards were clear, the implementation process was not without its challenges. One of the main obstacles EDA faced was ensuring that all manufacturers adopted GTINs for their products. While many large multinational manufacturers were already using GTINs, smaller manufacturers were not always familiar with the standard or had not yet implemented it in their product data systems.

To address this challenge, EDA took a proactive approach to educate manufacturers about the importance of GTINs and how they could benefit from using them. EDA hosted a series of "Going for Gold" workshops, where manufacturers could learn about the benefits of standardising their product identification systems and receive guidance on how to implement GTINs in their own systems. These workshops helped raise awareness of the value of adopting GS1 standards and provided manufacturers with the tools and knowledge they needed to implement them.

Another challenge EDA encountered was the incorrect application of GTINs, such as the duplication or re-use of product codes. To maintain the integrity of the data in EDATA, EDA implemented strict data quality standards. Manufacturers who did not comply with these standards were required to attend additional training sessions to correct their practices. The "Gold Standard" data quality management system, which is part of EDA's internal processes, ensured that only products that met specific criteria were included in the platform. This helped maintain the accuracy and consistency of product data across the supply chain.

For manufacturers who were unable to adopt GTINs, EDA used a combination of manufacturer part numbers (MPNs) and DUNS numbers (a unique, nine-digit identifier assigned to a business by Dun & Bradstreet, used to identify a company for credit rating and other commercial transactions) to create unique product identifiers. Although this system was not as robust as using GTINs, it provided a workaround for situations where GTINs were unavailable. EDA continued to encourage manufacturers to transition to GTINs to ensure long-term consistency and compatibility.

A critical learning was the importance of stakeholder engagement throughout the implementation process. Close collaboration with wholesalers, manufacturers and software providers was essential to ensure a smooth transition. Regular communication and training sessions helped stakeholders understand the benefits of GTINs and how to apply them effectively.

"When we began the EDATA project it was clear that product data needed to be transferred accurately between stakeholders' systems and for this to happen we needed a common, unique identifier for each individual product."

Richard Appleton, head of digitalisation EDA

Benefits realised

The implementation of GTINs has transformed EDATA's capabilities and stakeholder engagement. One key benefit was the seamless integration of EDATA with third-party systems through API connections. GTINs enabled wholesalers' ERP platforms and websites to request product data directly from EDATA, streamlining operations and improving data access. This integration allowed for more efficient data retrieval, whether for individual products, specified lists, or complete manufacturer datasets.

Stock file mapping was another area where GTINs proved invaluable. The initial mapping between EDATA and wholesalers' stock files became a more straightforward and accurate process, reducing the need for manual intervention. This not only saved time but also improved the accuracy of data alignment.

The ability to generate datasheets using GTIN-based URLs was perhaps the most significant improvement. This feature allowed wholesalers to trigger the creation and download of datasheets directly from their ERP systems or websites. The simplicity of this process made it easier for wholesalers to provide detailed product information to their customers, enhancing customer service and supporting sales activities.

EDATA also leveraged multiple data exchange standards, including BMEcat and ETIM xChange (planned), with the GTIN serving as a key identifier. These standards facilitated the efficient exchange of product data across different platforms, further enhancing EDATA's value to its stakeholders.

The adoption of GTINs received a positive response from stakeholders, including wholesalers, manufacturers and contractors. Wholesalers benefited from improved data access and operational efficiency, while manufacturers gained a better understanding of best practices for GTIN application. Contractors, who rely on accurate product information for their projects, experienced more reliable access to high-quality data, enabling better decision-making.

Further evidence of these far-reaching benefits can be seen in the impressive GTIN adoption rates EDA have driven.

290,000 SKUs currently listed in EDATA	**100+** Brands covered	**95%** GTIN adoption rate

"Our philosophy is to adopt open standards wherever possible and adoption of the GTIN has been the key to unlocking efficient integration between EDATA and a wide range of wholesalers' business systems.

"Manufacturers must supply a GTIN for each product before they achieve the coveted EDATA Gold data standard. Such is the importance of the GTIN that we are now considering making it a mandatory requirement."

Richard Appleton, head of digitalisation EDA

Operational and strategic Impact

The integration of GTINs delivered significant operational and strategic benefits. Data mapping and retrieval became more accurate, reducing errors and improving efficiency.

The ability to generate datasheets seamlessly enhanced the customer service capabilities of wholesalers.

Stakeholder collaboration was strengthened as data integration became more straightforward and reliable.

Tangible benefits included time savings and increased efficiency in data management processes. Wholesalers found it easier to integrate EDATA into their operations, leading to smoother workflows and better customer interactions.

Intangible benefits included enhanced customer satisfaction and a stronger position within the supply chain. The availability of reliable data contributed to safety and efficiency improvements, aligning with industry initiatives such as the "golden thread".

As a result, EDA has seen substantial growth in the number of API calls into EDATA over the past 12 months, with one large independent wholesaler making over 38,000 calls for product data.

Strategically, the adoption of GS1 standards positioned EDA as a leader in digital transformation within the electrotechnical sector. The successful implementation of GTINs demonstrated the organisation's commitment to innovation and best practices, strengthening EDA's reputation and influence in the industry.

The increased efficiency in generating datasheets also contributed to better project management for contractors, who could now access accurate, detailed product information much faster. This improvement supported the delivery of high-quality projects and enhanced operational efficiency for all stakeholders.

38,000

Calls for product data with one large independent wholesaler over the past 12 months

What's next?

Looking to the future, EDA remains committed to driving innovation and operational excellence through data standardisation. Several enhancements are planned to further improve EDATA's capabilities. One key development is the introduction of a bulk datasheet download feature, which will allow users to request multiple datasheets in a single operation. This feature will be particularly useful for supporting quotations and project submissions.

Another planned enhancement is the linking of distributor data to original manufacturer data based on GTINs. This will provide a more comprehensive view of product information and improve data consistency. Additionally, EDA plans to build GTIN verification capabilities directly into EDATA to ensure data integrity, a feature that will help identify and correct issues with GTIN application, further enhancing data quality.

These advancements are expected to deliver significant benefits to stakeholders. Wholesalers will be able to provide better customer service and operate more efficiently, and the contribution to the "golden thread" initiative will further strengthen supply chain efficiency and safety.

To support these developments, EDA will continue to engage with stakeholders through workshops, training sessions and collaborative projects. The organisation's commitment to continuous improvement ensures that EDATA will remain a valuable resource for the industry.

The planned enhancements will also help address the evolving needs of the electrotechnical sector. As digitalisation continues to shape the industry, EDA's forward-thinking approach positions it as a leader in driving innovation and delivering value to its stakeholders.

"The need for a universal product identifier in the construction sector is now widely accepted and understood and it has been a pleasure working with GS1 UK to establish GTIN in this role.

"This firm foundation will enable EDATA to grow further and faster. This year we are introducing sustainability data and packaging data into the platform. Both are increasingly crucial to the running of our members' businesses and again will use GTINs to integrate with their business processes."

Margaret Fitzsimons, CEO of EDA

Shaping the future of data management

EDA's strategic adoption of GS1 standards has revolutionised its EDATA platform, addressing critical data management challenges and enhancing operational efficiency. Through collaboration with manufacturers and wholesalers, EDA has demonstrated the transformative power of standardisation and innovation. The journey is ongoing, but the progress made so far underscores the importance of leveraging best practices to drive digital transformation in the electrotechnical supply chain.

The implementation of GTINs has set a strong foundation for future growth and innovation. EDA's commitment to continuous improvement and stakeholder collaboration ensures that EDATA will remain a valuable resource for the industry.

As the electrotechnical sector continues to evolve, EDA's leadership in digitalisation and data management will be instrumental in shaping its future.

About GS1 UK

Whether online, in store or in a hospital, the common language of GS1 global standards is helping our community of more than 60,000 organisations across the UK to uniquely identify, describe and track anything, creating greater trust in data for everyone.

From product barcodes to patient wristbands, GS1 standards have been transforming the way we work and live for 50 years. We are now embarking on the next 50 years of industry transformation delivered through QR codes powered by GS1.

GS1 UK is one of 118 neutral and independent GS1 organisations operating worldwide.

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