SCAN

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Bar coding for
patient safety
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GS1
New Zealand

Celebrating Success

We at GS1 New Zealand have had reason to celebrate a couple of successes recently.

The first success was gaining ISO 9001:2000 certification in an audit by Telarc. Being the international benchmark for quality management systems, ISO 9001:2000 is very important for GS1 New Zealand and its members. An organisation cannot gain this certification without consistent and auditable processes that are customer-focused and relevant to the business risk of the entity.

The auditors went through the processes of GS1 New Zealand like the proverbial "dose of salts" over three days. They paid particular attention to our strategic planning, and to our alignment between members, Board and management. The "high risk" areas of bar code verification and membership services were also areas of strong focus, with recognition that mistakes made in these areas can have substantial impact on members. Every organisation will, of course, get it wrong sometimes. However, Telarc placed a lot of emphasis on how GS1 New Zealand commits to continuous improvement, and on our ability to analyse and overcome problems identified through customer feedback/ internal auditing/benchmarking.

I'm proud to say that GS1 New Zealand came through with flying colours! So, the first of our two recent successes was an audit pass with certification for the maximum time allowable (two years) under the ISO 9001:2000 auditing process.

The second was an international prize for a "Winning Business Case" – one of three prizes awarded each year among the 108 national members of the GS1 Global family. We won the prize for work in New Zealand's DIY/hardware sector. The other prize winners were GS1 Canada and GS1 UK. Our entry was entitled "GS1 New Zealand 'hammers out' quality in the DIY/hardware sector" and it focussed on our work during 2005-06 with the five members of the Hardware Action Group (Placemakers, Mitre 10, ITM, Carters and Bunnings). We set out to understand the impact of bad bar code quality on point-of-sale scan rates and to guide the sector through a programme that would rectify its poor scan fail rates.

We were very proud of these two successes. They mean a lot to the team at GS1 New Zealand and I hope members can also take some pride in their organisation gaining such international recognition. Kiwis generally enjoy seeing their country securing a "podium finish"! And of course, being ISO 9001:2000 certified should help improve the standard of service we provide to you on an ongoing basis.

Dr Peter Stevens
CHIEF EXECUTIVE

YES to bar coding for patient

Major

New Zealand public hospitals will adopt a bar code and bedside verification system for radical reduction in the incidence of patient injury, and death, from medication errors. The Government's decision to move the healthcare sector in this direction was confirmed in the 2007 Budget – a major development of the kind already underway in parts of the United States and the United Kingdom (see SCAN issue no. 20*). GS1 has been heavily involved in this issue.

Health Minister Pete Hodgson and his officials have looked closely at US and UK systems to arrive at comprehensive bar code point-of-patient-care ("BPOC") proposals for New Zealand. The proposals are high level at this stage, but the 2007 Budget (released in May) provides $10.2 million over four years for an establishment project led by the Ministry of Health, plus additional capital funding for the 21 District Health Boards (DHBs) to invest in all that will be required for implementation of a BPOC system in hospitals over a longer period.

The Government recognises the fundamental importance of electronic record keeping and bedside verification in reducing medication errors in public hospitals. It is now widely accepted that, despite the best intentions of competent medical staff, many patients are harmed, or even die, as a result of receiving the wrong drugs or the wrong dosages, or the right drugs in the wrong way or at the wrong times. The best available research indicates that New Zealand has a medication error rate similar to those of other developed countries, at major financial as well as human cost.

Project

The Ministry of Health is now setting up the Medication Safety Project which will involve wide consultation on the BPOC proposals. There is clear recognition that the particular system adopted here will need full support from DHBs and medical professionals. Under any scenario, other parts of the medication process will need to be looked at very closely. Changes might be required, for instance, in existing hospital pharmacy systems and record keeping, along with the possible establishment of facilities for repackaging pharmaceuticals at a unit dose level. The Ministry of Health suggests that a particular BPOC system might look like the following:

- A public hospital will give each patient an identification wrist bracelet with a bar code on it. The information will uniquely identify the patient and allow for data relating to that patient to be captured and synchronised. The patient will be linked to clinical staff, and to his or her electronic medication record (or to some other form of patient management system).

- A medication history will develop with each patient and, if needed, with their general practitioner. This information is continually updated and then made available (or accessible) at each transition in the patient's care.

- Prescription pharmaceuticals and certain over-the-counter drugs will have a bar code on their packaging/labels and they will be available at the unit of dose. The bar code will contain the pharmaceuticals' unique identifier number.

- A clinician will create a computerised medication prescription, with decision support available to them at this time to flag up incorrect doses, or potentially dangerous interactions. This prescription is transferred electronically to the hospital pharmacy, where a second series of consistency checks is undertaken (eg, does the prescription match the stated application of that drug and in the correct dose for the patient?). If no problems are encountered, the medication is dispatched to the ward, or profiled into automated drug distribution cabinets available at ward level, or approved for use from ward stocks.

- The ward will have bar code scanners or readers integrated with the hospital's computer systems including its patient management system, pharmacy, the patient's electronic medication record and stock inventory.

- Before the medication is administered to a patient, the staff member will scan the patient's bar code and also a bar code on their own staff identification tag.

- The staff member will scan the medication provided by the hospital pharmacy. This scan validates that it is the correct patient, checks that the drug is the same as that prescribed for this patient, in the correct dose, formulation etc.

At each stage, data will be compared with the patient's electronic medication record. If there is a problem, an error message will alert the staff member, prompting them to stop administration and investigate. As an example, bedside verification could prevent a patient from receiving medication intended for someone else or prevent a patient from mistakenly receiving a duplicate dose of a drug he or she had already received. A bedside verification of medication system also records the time that the patient receives the medication, the person administering it and the location. The information collected will ensure more accurate medical records.

*See p5 "GS1 prescribed for National Heath Service".
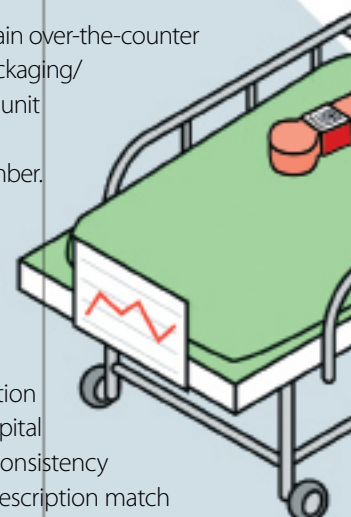
safety
development in New Zealand hospitals

Components

The Ministry of Health says that standardisation and inter-operability between various information systems will be critically important in the design and implementation of those systems. The Medication Safety Project is being set up with the following key areas of focus:
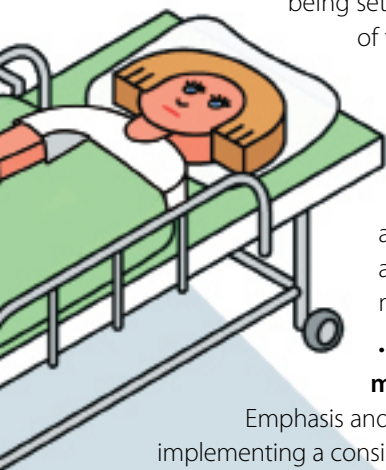
- **Medicine reconciliation.** The development of standardised processes and tool kits is expected to improve the collection and verification of medicine histories, and also the systems that record and make available those histories.

- **Standardised hospital medicine information systems.** Emphasis and effort will probably go into implementing a consistent electronic prescribing system and ensuring that all information systems dealing with medicines are using a consistent dataset of medicines (such as the Unified Data Model, UDM, that is being implemented in the Auckland Region). Once this occurs

the pharmacy dispensing system can interface with other systems.

- **Introduction of e-medication records or, e-prescribing or other forms of clinician point-of-entry systems.** These are expected to change the prescribing process within DHBs so that a doctor prescribes online, possibly with decision support checks available at the time of prescribing. Electronic prescriptions will pass through an "audit by a pharmacist" step providing an electronic medicine chart. Electronic medicine charts provides the definitive information against which the bedside verification system will checked.

- **The packaging of pharmaceuticals at unit of dose level with bar codes on wrappers or labels.** In the short to medium term this is likely to involve the purchase and operation of unit dose repackaging machines. For the medium to long term, it is likely to involve the mandating of a requirement for globally standardised GTINs[#] printed on pharmaceutical packaging from the manufacturer.

[#]*Global Trade identification numbers.*
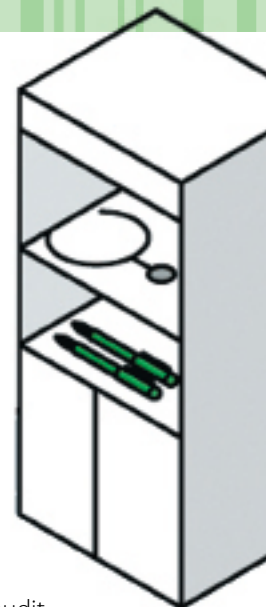
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- **Introduction of bedside verification.** This will happen through introduction of point-of-care equipment in hospitals, with electronic medication administration records then becoming available.

- **The linking of all information systems connected with Medicine Management.** This will include patient management systems, electronic prescribing systems, BPOC systems, and pharmacy dispensing systems, using a common consistent dataset of medicines.

- **The training and support of DHB staff.** People will need to be trained in the use of these systems and the change processes involved will require careful management.

The Ministry is now setting up the governance structure for what will be a complex project, involving work streams for each of the seven areas listed above. There is an intent to make some rapid progress.

Standardisation
is the key

Dot matrix bar code of the type likely to appear on wrist bracelets

So how will GS1 standards support greater patient safety in New Zealand public hospitals? That's something to be worked through in the design of a bar code and bedside verification system over the next two years.

Dr Bruce Anderson, Manager—Governance in the Ministry of Health's DHB Funding and Performance Group, says the Medication Safety Project will draw heavily on the existing network of expertise in the healthcare sector, including the Health Information Strategy Action Committee and the recently-reconstituted Quality Improvement Committee.

"Whatever information standards are applied, they will need to be global. We want to avoid re-inventing anything that is currently available and consistent with our requirements for improving patient safety," says Dr Anderson.

He says the need for operational consistency will also be critical in design of the new system – consistency between separate systems within the same hospital, and across all hospitals and DHBs. A hospital's pharmacy system must, for instance, be linked to its patient management system, with both able to inter-operate with the scanning devices used when medication is being administered to a patient.

Dr Anderson says some DHBs have been moving forward with electronic databases and verification systems although not necessarily with high levels of national consistency. "Certain things may happen over the next five years anyway. But this project is all about getting standardisation right across New Zealand."

He says the system needs to be built so that, in years to come, it can operate seamlessly with general practitioners, pharmacies and other primary healthcare providers for the referral of patients and transfer of critical information about them.

Systems similar to that proposed for New Zealand have been implemented successfully in the United States. The Healthcare of America charitable group has 161 hospitals nationwide that all operate one point-of-care verification system for patient safety. Dr Anderson and his colleagues have also looked at a standardised system used in 128 Veterans Administration facilities across the US. Both examples have impressive records of reduced medication error.

GS1 New Zealand has also been instrumental in moving New Zealand along the path. Indeed Dr Anderson says the Ministry of Health's interest stemmed originally from a GS1-organised meeting with healthcare e-procurement pharmacist Judie Finesilver, visiting from the United Kingdom two years ago. Ms Finesilver gave a briefing on innovative moves to standardise automatic product and equipment identification using GS1 standards in the National Health Service (NHS).

In New Zealand, the GS1 contribution will continue to be integral. It will involve input into the project from most of the specialist areas within GS1 including support in supply chain processes, data synchronisation, data carriers and bar coding expertise.

"Bar codes save lives," says Gary Hartley, GS1 New Zealand's General Manager, Sector Development. "The evidence that standardised, inter-operable systems reduce medical errors and enhance patient safety, while also providing major track and trace benefits and other healthcare system efficiencies, is irrefutable. The decision to go down this track is a clear demonstration of leadership by Mr Hodgson and the Ministry. To my mind, in 10, 20 or even 50 years' time, people will look back on the decision as a defining moment in healthcare in New Zealand and GS1 is pleased to be part of it."

GS1 NZ Annual conference
Unique opportunity to keep up

GS1 New Zealand's annual conference, "Connecting the dots", will provide business people with a unique opportunity to keep abreast of developments in the world of global standards for automatic identification and data capture, and for efficient supply chain management.

The event will be opened by Health Minister Pete Hodgson with an address on the decision to introduce a new system for bar code-based verification of medicines administration to patients in this country's public hospitals (see pgs 4-6). The initiative is intended to radically improve patient safety – a major issue here and worldwide. The Minister and other speakers will discuss the use of new standards-based technologies in healthcare supply chains, from drug manufacturers to the patient bedside.

Other highlights of the conference will include discussion on standards development for radio frequency identification (RFID), including EPC-IS (see p 9). International speakers will include Ian Robertson, Director of Global Development, EPCglobal Inc, and Craig Asher of IBM who also holds the position of co-chair EPCglobal EPC-IS Group and is one of the leading architects of EPC-IS.

Another of the international speakers will put a spotlight on beef traceability systems, an issue of rising importance to New Zealand and other beef exporting countries. Ian King, Chief Executive of AUS-MEAT Australia, will outline his country's development of traceability as a basis for maintaining international market confidence and learnings for New Zealand.

"Connecting the Dots" will also provide business people a comprehensive update on data synchronization technologies and practices, including the development of international data networks. Professor Alan Stenger, Chair of Logistics and Supply Chain Management at the University of Auckland Business School, will be among the speakers.

Past conferences have attracted significant numbers of attendees and GS1 New Zealand expects this to be the case also in 2007. "Connecting the Dots" will include workshops for GS1 members to gain greater insight on various key topics. For more information and registration, see the conference brochure, visit www.gs1nz.org or call Pauline Prince at GS1 New Zealand on tel. 0800 10 23 56.

"Connecting the dots" – the Waipuna Hotel and Conference Centre, Mt Wellington, Auckland, on Tuesday and Wednesday, 21 and 22 August.

Seminars update

Registrations are now open for the next Bar Code Foundation and GS1net (data synchronisation) Foundation seminars, in October and November. The previous seminars, in Auckland, Wellington and Christchurch during June, saw increased attendance (both Bar Code and GS1net).

The Bar Code Foundation Seminar is a "must" for new GS1 members. It provides a thorough grounding in how bar code numbering works, and how bar codes are created and managed (plus some startling insight into the repercussions of poor quality bar coding). New members receive a complimentary voucher for this seminar (valued at $199). It is also a great refresher for people needing to re-acquaint themselves with bar coding, and a particular aid for companies where staff turnover requires frequent training of new recruits. The next Bar Code Foundation Seminar dates are:

- **Auckland, 30 October**
- **Christchurch, 31 October**
- **Wellington, 2 November**

Remember, complementary vouchers are valid for 12 months only. Redeem your voucher by contacting Pauline Prince on 04 494 1067 or pauline.prince@gs1nz.org

The GS1net (data synchronisation) Foundation Seminar was formerly the EANnet Foundation Seminar – and now covers the migration of EANnet to GS1net (see page 12). The seminar is particularly important for suppliers to the Foodstuffs group, New Zealand's first major user of EANnet. Note that suppliers to hardware and office stationery retailers should also attend (announcements pending). The next GS1net Foundation Seminar dates are:

- **Auckland, 5 November**
- **Christchurch, 7 November**
- **Wellington, 9 November**

EPC/RFID Masterclass

As part of the "Connecting the Dots" conference, GS1 New Zealand will run EPC/RFID Masterclass (see also SCAN no. 20, March 2007).

The EPC/RFID Masterslass is a one-day, interactive and hands-on session providing need-to-know details of this technology (without becoming too technical). The session will: provide a good understanding of the fundamentals of RFID; discuss relevant key global standards, particularly the EPC Generation 2 standard and the arrival of EPC-IS (see page 9); review the business processes that are enabled by the technology; and give hands-on experience of RFID hardware and software.

The presenters:

- Dr Erik Sundermann, GS1 New Zealand, Senior Consultant and RFID expert
- Ian Robertson, EPCglobal Inc, Global Industry Development Director / Asia Regional Director
- Craig Asher, Project Manager, IBM, and co-chair of EPCglobal's ECP-IS Software Action Group

Seminar details:

- **Monday, 20 August**
- **9.00am – 5.00pm (lunch provided)**
- **Venue: Waipuna Hotel, Mt Wellington, Auckland**
- **Cost: $399.00 + gst per person**

For details and registration any of these seminars, contact Pauline Prince on 04 494 1067 or pauline.prince@gs1nz.org

EPC-IS
Detailed data exchange between trading partners

An empty product carton drops into the waste bin behind your local supermarket and the product manufacturer is automatically alerted to an impending gap on the shelves of that store. It's a simple example of how EPC-IS can and, in some industries soon will, bring radical improvements in supply chain management.

EPC-IS refers to "Electronic Product Code Information Services" – a new standard for trading partners to capture and share information related to Electronic Product Codes. EPC-IS opens the way for unprecedented visibility into the movement, location and state of assets, goods and services in supply chains worldwide.

The new standard was ratified by EPCglobal Inc* in April after several years design and testing by over 150 companies worldwide. EPCglobal has hailed EPC-IS as groundbreaking because it enables extremely wide, yet low-cost and secure, exchanges of detailed data throughout the lifecycle of assets, goods and services.

EPC is a standard for the unique identification of any kind of object or service. Other standard identifiers like GTINs and SSCCs# can be encoded into EPCs – the latter enable more individualised and serialised identification of objects or services (eg two cases of the same product will have the same GTIN but each case will have its own EPC). EPC has emerged as the only global standard for use with RFID (radio frequency identification) technologies.

EPC-IS complements EPC by providing a set of standard technical specifications for the capture and sharing of data about an object or service. This data describes the "what, when, where and why" of the EPC-identified object or service at any point in the supply chain.

The EPC-IS technical specifications have been built on top of widely used business and Internet standards. In other words, EPC-IS can be applied regardless of the type of underlying database, operating system or programming language being used by trading partners. It can be used for data found on any type of RFID tag or bar code.

The "open" nature of EPC-IS (and of EPC) is critical in the modern world of commerce and global trade. Ideally, data relating to objects and services (and their unique identity) can be understand and authenticated in any organisation and location that is part of a local, national or international supply chain. And of course this is critical in improving the efficiency of supply chain management and in holding down costs to everyone, not least the consumer.

EPC-IS has potential to make a huge contribution to commerce and trade in terms of improved track and trace capability, inventory control and responsiveness to demand signals (like the simple example given above). Governments are also interested in EPC-IS in terms of its potential for strengthening border protection, safeguarding public health and much more.

One of the chief architects of EPC-IS will speak at "Connecting the Dots", see page 7. Craig Asher of IBM is co-chair of the EPCglobal EPC-IS Group which led development of the new standard. Mr Asher is Producer Manager for IBM's RFID Infotrmation Center product and solution architect for the IBM Pharma Track and Trace Solution. He will discuss the application of EPC-IS on day 1 of the conference (21 August).

GTINS and SSCC are Global Trade Item Numbers and Serial Shipping Container Codes respectively. For basic information on these see SCAN issues 19 and 20, in the "GS1 for dummies" series.

* EPCglobal Inc is a subsidiary of GS1 Global. Its role is to support the worldwide adoption of Electronic Product Code (EPC) as a global standard to enable accurate information about, and greater visibility on, assets, goods and services in supply chains. More information can be found on www.epcglobalinc.org.

Tagging along
with China *By Gary Hartley*

Hong Kong International Airport was one of the highlights of the GS1 New Zealand-led EPC/RFID Field Trip for members to the territory and Southern China over four days in May.

Field Trip participants visited Maersk Shipping's Hong Kong logistics terminal and China-based fashion manufacturer Mark International. Maersk, the world's largest shipping company uses advance shipping notices with EPC/RFID data to track jeans (with RFID tags on cartons) as they move from Mark International's Chinese factory to Maersk's Long Beach deconsolidation terminal in California, and then on to the warehouses of retailing chain Target. All parties in the trial have been able to track and trace the shipments on an "as required" basis.

The newly-opened Hong Kong Supply Chain Innovation Centre is impressive. The Centre is a joint venture between GS1 Hong Kong and the Hong Kong Science and Technology Parks Corporation (a statutory body) and it covers an area of over 3000 sq ft. The centre is divided into three zones – one for manufacturing, another for logistics and the third for retail. Each is a showcase for how the integration of EPC/RFID devices (tags, readers, portals, printers etc) can enhance supply chain processes and deliver business benefits (eg real-time shelf inventory alerts, real-time global track and trace, and better customer shopping experiences).

China's role as a manufacturing base for consumer products sold worldwide has seen a rapid expansion in the so-called Pan Pearl Delta region. Today it has over 80,000 manufacturing plants, and there is high awareness of the need to adopt emerging standards and enabling technologies in order to maintain a competitive edge in the global economy. Visiting the region gave Field Trip participants a first-hand view on where Hong Kong and China see the future of international trade. We came away wondering just how the rest of the world will keep up (or tag along)!

Flying high with
EPC/RFID *By Gary Hartley*

Baggage handling at Hong Kong International Airport (HKIA) has traditionally been a baggage handler's nightmare. It is one of the world's busiest hub airports, with 712 flights on the average day. Passenger numbers are above 45 million annually – a high proportion of these people in transit to other destinations. That means millions of bags being loaded onto aircraft or pulled off them each year, ideally in sync. with millions of passenger movements.

Handling over 110,000 pieces of luggage is a challenge in anyone's language and if ever an airport needed precision baggage handling systems, it is HKIA. Enter EPC/RFID! The technology has taken away much of the pain for baggage handlers and for passengers.

In the past, misplaced or wrongly directed bags have been a major problem for all, measured in personal inconvenience and financial cost. Each piece of luggage had long been labeled with a bar code added at the airport of original departure. But, of course, bar codes are as good as the printers used to create them and as their subsequent visibility to scanners wherever they might be.

The HKIA baggage handling area is busy and crowded – and the baggage handlers lived with the constant frustration that thousands of bags a day had faulty bar coding, either incorrect or unscanable. This meant time-consuming manual reads on individual bags, and a high instance of luggage being transited onto the wrong aircraft or simply disappearing altogether.

That was before EPC/RFID – technology which HKIA trialed in 2003 and quickly adopted. Initially EPC Generation 1 compliant baggage tags were used, with a level of read performance far superior to the traditional reliance on bar codes. The successful read rate went from around 70% to 90%. However the real leap came when the airport company adopted EPC Gen 2 tags.

Today HKIA reports a 99% success rate in its tag encoding on all outbound bags – and a read performance rate on these tags of 96%. The other 4% are tags applied to items of luggage made of metal which strips out the RF energy and renders the tag unreadable. Work on solving that problem is well underway.

Ubiquitous tagging of outbound bags enables the system to direct each towards the correct container for its flight, with a checking mechanism used before it is loaded onto the aircraft. Incoming bags that are in transit to destinations beyond Hong Kong are also EPC/RFID tagged – and the performance is equally brilliant. The benefits to HKIA and to passengers are enormous, in terms of productivity gain, cost reduction and smoothly transited baggage.

HKIA is now trialing the use of baggage labels that have RFID tags embedded in them. These labels will be applied to bags as passengers check in for their flights. (At this stage, outbound bags have a bar coded label only applied at check-in with RFID tags coming later, once they reach the baggage handling area.)

Data synchronisation
with the world

GS1net, the new data synchronisation platform of the GS1 organisations in New Zealand and Australia, will become available on 31 August. This will be the culmination of nearly two years' planning and development to align data synchronisation in Australasia with the Global Data Synchronisation Network (GDSN).

The current data synchronisation platform, EANnet, will be decommissioned next February. Companies currently using EANnet will be migrated to GS1net before this date with the assistance of GS1 New Zealand.

GDSN is an automated, standards-based global environment that enables secure and continuous data synchronisation. This means that trading partners can have consistent product data in their systems at the same time.

Industry groups including the Global Commerce Initiative (GCI) and GS1 organisations worldwide have driven GDSN's development in order to streamline supply chain transactions and reduce associated costs. GDSN connects data recipients (often retailers) and data sources (often suppliers) to the GS1 Global Registry, through their local GDSN-certified "data pool". GS1net is the data pool that forms the Australasian part of this network.

So how do GS1net and GDSN work? Trade items are identified using a unique combination of the GTINs* and GLNs* of the data source (the supplier, distributor, or broker) and target market (the country in which the trade item or service is intended for sale) while parties (all trading partners) are identified using GLNs. GS1net then allows the data recipient to subscribe to items or parties in question. From that point on for the active

*Global Trade Identification Number, Global Location Number

subscription, any changes to the item or party-related data made by the data source is shared with the appropriate data recipient.

Why use GS1net and GDSN? GS1net provides standardised, reliable data for effective business transactions in both local and global markets. It drives down operational and supply chain costs, and provides the foundation for better customer service. More specifically, GS1net:

- ensures the trading partners work in a standardised way, thereby reducing duplicate systems and processes;
- ensures the item data is updated and consistent between trading partners;
- validates the accuracy of data against standards and business rules;
- ensures that trading partners classify their products in a unique, standardised way;
- provides a single point of entry for retailer and supplier trading partners, so reducing the cost of operating multiple solutions;
- guarantees uniqueness of item (product, case, pallet), party, and location through the GS1 Global Directory; and
- provides the foundational ongoing data accuracy required to support internal and business-to-business transaction automation, together with other value-adding services.

FOR MORE INFORMATION   ?

on GS1net in New Zealand, contact the GS1 New Zealand professional Services team on tel 0800 10 23 56 or email shaun.bosson@gs1nz.org

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Jupiter photo taken by NASA's Cassini spacecraft on December 29, 2000.

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GS1 for dummies

GS1 is the world's best system for standard identification of objects in virtually any commercial or organisational setting – objects that include assets of all kinds. SCAN has previously explained the basics of GTINs and SSCCs for globally unique identification of products and logistics units respectively*. Now we look at two other forms of unique identifier.

Global Individual Asset Identifier or GIAI

GIAIs are unique identification numbers for assets, usually assets that can be moved around. Examples vary widely: The United States Department of Homeland Security recently assigned GIAIs to all the weapons and hand-held radios on issue to its agents. As well as uniquely identifying the asset, a GIAI can be associated with relevant data about the asset. GIAIs are assigned by asset owners to help monitor status and location through their lifecycle.

A GIAI may be constructed as a combination of alpha and numeric digits, up to 30 digits in length. It will include the unique prefix of the asset owner (a GS1 member) as assigned by GS1. In New Zealand, all owner prefixes begin with our national number, 94. The prefix is followed by the serial number allocated to that asset by its owner – the prefix and serial number can encompass as many as 30 digits. GIAIs are generally allocated for conversion into bar codes and this requires use of an application identifier (AI) as found in the GS1 specifications. In this case the AI is 8004 and the GIAI will be preceded by these numbers in brackets. These will be followed by the owner prefix (including the national number) and then the serial number, this being all numbers or an alphanumeric combination.

Global Returnable Asset Identifier or GRAI

GRAIs are unique identification numbers for any type of returnable, and re-usable, package or piece of transport equipment that is regarded as an asset. Beer kegs are a good example: They are used to transport and store beer, and when empty returned to the brewery for re-use. Like a GIAI, a GRAI is assigned by the owner to help monitor the

*SCAN issue no.19

status and movement of returnable assets (through unique identification and the capturing of associated data).

A GRAI is assigned for the life of an asset and it is usually bar coded, using application identifier 8003. The GRAI will start with these numbers in brackets, followed by the asset owner's prefix and then the particular asset's serial number. There can be a total of up to 30 digits, with the final 16 of these being all numbers or an alphanumeric combination.

Staff **Profiles**

Priya Kunthasami

Priya Kunthasami joined GS1New Zealand last October as a contractor and has recently moved into a permanent role as a Professional Services Consultant in Auckland. Her primary focus is on helping companies move forward with data synchronisation and the migration of the EANnet platform to GS1net (see page 13).

Priya originates from Toronto, Canada, where she was a project manager in the financial and e-commerce sectors, from 1997 to 2005. One of her major projects, working with BCE Emergis, involved the introduction of EDI standards in healthcare and transport settings. She immigrated to New Zealand in September 2005 and prior to joining GS1, held various roles including Service Delivery Manager at Provenco and Business Development Manager at Pocket Solutions Ltd, a supplier of Psion Teklogix scanning products. As a relative newcomer, Priya is still exploring New Zealand beaches and enjoying what she describes as the "quirks" of her adopted country.

Cameron Frith

Cameron Frith has recently joined GS1 New Zealand as a Professional Services Consultant, based in Auckland. His main areas of work are data synchronisation, automatic data capture and supply chain enhancement using GS1 standards and solutions. Cameron has not long returned from travelling and working overseas, most recently as a senior consultant for a web application management firm in London called Gomez. His UK experience included consulting to, among others, Tesco, Fidelity, Citibank and Barclays with a focus on the external performance of their mission critical web applications.

Cameron studied engineering and management at the University of Canterbury, and after graduation worked for Wellington design and manufacturing company Interlock for two years. He left New Zealand to travel in 2003, spending the next year teaching English in a high school in Osaka, Japan. Looking back, Cameron says he felt like "a real fish out of water" as the only foreigner among 1200 people at the school but it was a great opportunity to be immersed in Japanese culture. In all, he was away four years and his travels include backpacking in South East Asia and the traditional Kiwi van tour of Western Europe. Back in New Zealand, he is looking forward this winter to some skiing, another interest that has been on hold due to his travels.

Steve Rowland

Steve Rowland also joined GS1 New Zealand recently as an Auckland-based Professional Services Consultant. His primary focus will be data synchronisation and e-commerce initiatives. Steve's previous role was as a Senior Implementation Consultant for Flow Software, an EDI/business-to-business (B2B) company, where he implemented B2B integration software that enabled the suppliers of large-scale retailers

to do e-business. Steve has gained experience across a range of sectors such as hardware, utility, local government and transport.

Steve completed a Diploma in Computer Programming from Interim Technology in Auckland and then embarked on a career in the IT industry with Peace Software. He describes himself as "an Aucklander through and through". Born in Papakura, where he spent 22 years, Steve now lives on the Hibiscus Coast. Outside work, he spends most of his time chasing after his 19-month-old son and playing soccer.

GS1 New Zealand

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