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RFDJOURNAL VERTULLY LIVE!

Global Orthopaedic Supply Chain Efficiency Improvement

Blair Korman

Digital Identification & Traceability



Our Credo

Johnson & Johnson

We believe our first responsibility is to the patients, doctors and nurses, to mothers and fathers and all others who use our products and services. In meeting their needs, everything we do must be of high quality. We must constantly strive to provide value, reduce our costs and maintain reasonable prices. Customers' orders must be serviced promptly and accurately. Our business partners must have an opportunity to make a fair profit.

We are responsible to our employees who work with us throughout the world. We must provide an inclusive working environment where each person must be considered as an individual. We must respect their diversity and dignity, and recognise their merit. They must have a sense of security, fulfilment and purpose in their jobs. Compensation must be fair and adequate, and working conditions clean, orderly and safe. We must support the health and well-being of our employees, and help them fulfil both their family and other personal responsibilities. Employees must feel free to make suggestions and complaints. There must be equal opportunity for employment, development and advancement for those qualified. We must provide highly capable leaders, and their actions must be just and ethical.

We are responsible to the communities in which we live and work, and to the world community as well. We must help people to be healthier by supporting better access and care in more places around the world. We must be good citizens – by supporting good works and charities, improving health and education, and bearing our fair share of taxes. We must maintain in good order the property we are privileged to use, protecting the environment and natural resources.

Our final responsibility is to our stockholders. Business must make a sound profit. We must experiment with new ideas. Research must be carried on, innovative programmes developed, investments made for the future and mistakes paid for. New equipment must be purchased, new facilities provided and new products launched. Reserves must be created to provide for adverse times. When we operate according to these principles, the stockholders should realise a fair return.

Johnson & Johnson

Consumer Health

Self-Care • Skin Health • Essentials



Medical Devices

Wound Closure & Surgical Devices Minimally Invasive Surgery • Joint Replacement Sterilization • Eye Health • CSS

Pharmaceuticals

Oncology • Infectious Diseases & Vaccines • Immunology Cardiovascular & Metabolism • Neuroscience & Pain Pulmonary Hypertension • PAH







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Japan Project Overview and Results



RFID Improves Japan Supply Chain

Sterile implants introduced RFID tagging in 2018

Proof of Concept Goals:

- Process efficiency
- Leverage GS1's EPC Tag Data Standard (TDS) for encoding RFID tags





RFID Tagging Proof of Concept

Operational Results

- Highly Accurate with 99.96% read rates
- Operational efficiency goals met
- Improved set availability for customer
- Created serialization for each device
- POC approved for implementation





RFID Tagging Proof of Concept

GS1 Results – alignment with EPC Tag Data Standard (TDS) for encoding

- Adopted UHF frequency (EPC UHF Gen2 Air Interface Protocol)
- Tag Data Standard compliant (GS1 TDS)
 - EPC memory bank \rightarrow SGTIN
 - User memory bank → packed data objects (GS1 AIDC Translator Library)

| | GS1 Data | | | | Encoding |
|------------------------------|--------------|-----------------------------|------------------|---------------------|----------------|
| | GTIN | Expiration Date AI: (17) | Lot# AI: (10) | Serial# AI: (21) | Method |
| | AI: (01) | | | | |
| EPC Memory (128 bits) | \checkmark | | | \checkmark | SGTIN-96 |
| User Memory (512 bits) | | ✓ | \checkmark | | Packed Objects |



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Lessons Learned Next Steps



Standardization Helps End-to-End Supply Chain

Without standardization

- RFID is costly to all
- Impedes customer adoption
 - Multiple radio frequencies (UHF or HF)
 - No standard tag data
- Not customer centered supply chain focused
 - Customer specific inventories
 - Less secure supply chain
 - Barcode scanning dependent

With standardization

- Reduces infrastructure costs for customer
- Enables end-to-end supply chain efficiency
- Promotes data sharing environment that has value beyond RFID
 - Securing the supply chain
 - Efficient recording of product information for health records at customer site
 - Streamlining product inventory cycle



Drivers for our RFID Position

GS1-compliant EPC tag data encodings for our customer

Customer set-up for reading tag data is same

UHF frequency friendly to E2E supply chain

One inventory process for all customers

Compliance to product labeling ensures quality

Enables production labeling of full batches

Global product uniqueness secures the supply chain and promotes data sharing







Japan solution going global



Shared data platform needed



Use case expansion to customer and internal DC operations



Share our success to influence adoption in industry



Enable RFID adoption through standardization



THANK YOU

