

Theoretical User Case Three

Bicycle Manufacturer - Provenance User Case

Description

Rough Terrain Cycles requires a proof/provenance chain to prove that all cycles they sell are actually manufactured in the UK by them - and not just imported and resold.

Potential benefits

It is to their advantage to do so because as a manufacturer they will potentially:

- Be eligible for Government grants to help facilitate overseas marketing
- Receive employee training allowances
- Be able to join apprenticeship schemes
- Have the proof they need to distribute in the EU as a UK made item
- Provide proof for customers that it is a genuine quality UK made item and not a cheap poor quality copy imported with their brand stamped on it
- Have evidence produced automatically
- Compliance – ISO, PCIDSS, Sarbanes-Oxley
- Have dispute ready Proof Certificates for events
- Reports / Auditing Service / Proof Certificates / Proof Tokens
- Data which cannot be destroyed or hacked.

Example

Rough Terrain Cycles saves all their data in an on premise SQL 2012 database on a PC running Windows 7. They have signed a Proof Chain Service Agreement guaranteeing that their data is unique and proprietary.

The data should be passed to the proof chain service cloud api's via an ETL service installed with software tools.

The information below provides details about the Rough Terrain cycles manufacturing information that is represented in the Rough Terrain Cycles sample database and a list of manufacturing-related tables.



Theoretical User Case Three

Bicycle Manufacturer - Provenance User Case

Manufacturing Overview

In the Rough Terrain Cycles sample database, tables are provided that support the following typical manufacturing areas:

Manufacturing processes

- Bill of materials: Lists the products that are used or contained in another product.
- Work orders: Manufacturing orders by work center.
- Locations: Defines the major manufacturing and inventory areas, such as frame forming, paint, subassembly etc.
- Manufacturing and product assembly instructions by work center.

Product inventory

The physical location of a product in the warehouse or manufacturing area, and the quantity available in that area.

Engineering documentation

Technical specifications and maintenance documentation for bicycles or bicycle components.

The serial number of each bicycle will be stored on the proof chain, to provide an immutable record of every genuine manufactured bicycle. At the point in the manufacture process where serial numbers are added to the genuine bicycles, the computer software involved in this process can be integrated to also post a provenance record to the proof chain API with this serial number.

Therefore, in order to determine if a serial number is genuine or not, for example in looking at batches of potentially counterfeit bicycles, lookups could be performed against the proof chain API's on the serial numbers of the bicycles in question.

evident
proof

Evident Proof Token
Whitepaper V2.7



[Home](#)
[Abstract](#)
[Introduction and background](#)
[Problem, Solution, Opportunity](#)
[Concept](#)
[Value Proposition](#)
[Conclusion](#)

Theoretical User Case Three

Bicycle Manufacturer - Provenance User Case

Manufacturing Tables

The following table contains a brief description of the data that is stored in the manufacturing tables

Schema.Table	Contains this kind of content	Comment
Production.BillOfMaterials	A list of all the components used to manufacture bicycles and bicycle subassemblies.	<p>There is an intrinsic recursive relationship in the bill of material structure that indicates the relationship between a parent product and the components that make up that product. For example, if the parent product is a bicycle, the first-level component might be a wheel assembly. The wheel assembly has its own components, such as reflectors, rims, spokes, tires, and tire tubes.</p> <p>The ProductAssemblyID column represents the parent, or primary, product and ComponentID represents the child, or individual, parts used to build the parent assembly.</p> <p>The BOM_Level column indicates the level of the ComponentID relative to the ProductAssemblyID. In the previous example, the wheel assembly would have a BOM_Level of 1, the components of the wheel assembly would have a BOM_Level of 2, and so on.</p>
Production.Document	Engineering specifications and other technical documentation.	<p>The DocumentSummary column uses the varchar(max)data type.</p> <p>The Document column uses the varbinary(max)data type.</p>
Production.Illustration	Bicycle manufacturing illustrations.	<p>The illustrations are rendered in the manufacturing instructions that are contained in the ProductModel table. This column uses the xml data type.</p>

Theoretical User Case Three

Bicycle Manufacturer - Provenance User Case

Manufacturing Tables

Production.Location	A list of inventory and manufacturing areas in which the products and parts are stored as inventory or built. For example, paint is stored in both the Paint Storage location in the warehouse and in the manufacturing work center, Paint Shop, where the bicycle frames are painted.	
Production.Product	Information about each product sold or used to manufacture Rough Terrain cycles bicycles and bicycle components.	The FinishedGoodsFlag column indicates whether a product is sold. Products that are not sold are components of a product that is sold. For example, a bicycle would be sold, but the sheet of metal used to create the bicycle frame would not.
Production.ProductInventory	The inventory level of products by their location. See Production.Location previously mentioned.	
Production.ProductModel	The product models associated with products. For example, Mountain-100 or LL Touring Frame.	The CatalogDescription column contains additional product information by using the xml data type. The Instructions column contains product manufacturing instructions by using the xml data type.
Production.SerialNumber	The serial number assigned to the the product.	

Theoretical User Case Three

Bicycle Manufacturer - Provenance User Case

Manufacturing Tables

Production.ScrapReason	A list of common reasons why bicycles or bicycles parts are rejected during the manufacturing process. For example, the scrap reason 'Paint failed' is used in the Paint work center to reject a bicycle frame for which the paint did not cure correctly.	The WorkOrderRouting table tracks the quantity scrapped and the reason for scrapping by product. Depending on the severity of the problem, the product must be fixed or replaced before the product can move to the next work center.
Production.WorkOrder	Defines the products and quantity that must be manufactured to meet current and forecasted sales.	
Production.WorkOrderRouting	The details for each work order. This includes the sequence of work centers the product travels through in the manufacturing or assembly process. For example, bicycle handlebars are manufactured in the Frame Forming work center. They are moved to the Frame Welding work center for additional work, and then moved to the Subassembly work center, where they are added to the bicycle frame.	