

ST4 and the Art of Motorcycle Maintenance

Schema @ TC-UK 2018
Wednesday, 18th September 2019

- **Jörg Plöger**
 - Sales & key account manager at SCHEMA for Northern Europe
 - 32 years' experience in technical documentation (SGML, XML, ...)
 - Volleyball, kayaking and cycling
- **Simon Drinkall**
 - Technical Publications Manager at Triumph Motorcycles
 - 35 years in the automotive industry
 - 16 years in technical publications
 - Enjoys kayaking, hiking and motorcycling
- **Phil Lane**
 - Content Strategy Specialist at Imprimatur
 - 6 years' experience in technical documentation
 - XML enthusiast
 - Cyclist

About Triumph

- Manufactures in excess of 56,000 motorcycles per year
- Represented in 60 countries through a network of 750 dealers
- Operating 9 manufacturing sites
- Employs 2,300 people worldwide



About Imprimatur



- **Technology-led documentation and translation company**
 - Content Management
 - Translation
 - Authoring
 - App Creation
 - Publishing
- **Specialists in the automotive industry**
- **Based in London and Munich**
- **Schema Silver Partner since 2015**

Setting the Scene

- Triumph's Legacy Process

- **Support for:**
 - 24 models and variants
 - 16 types of documents
 - 10 languages
- **Maintained by 5 authors**
- **Using Unstructured FrameMaker and Illustrator**

Challenge 1

- European RMI Regulation (168/2013)

- Need to offer repair and maintenance information to independent operators
- Requirement for online access
- Searchable by VIN

Additional challenge: All existing Triumph documentation in print form only

Challenge 2

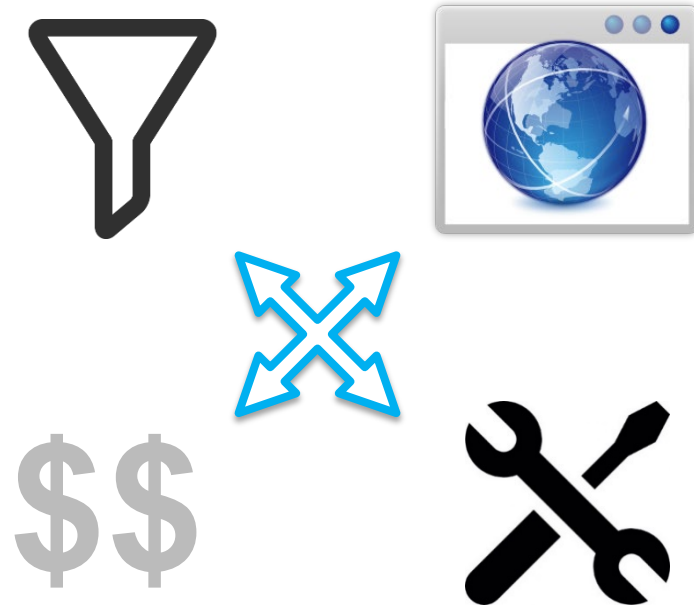
- New Model Launches

- Launch of 17 new models and variants
- Introduction of new models and updates to existing models
- Driven by new European emissions regulations

Challenge 3

- Integrated Solution

- Topic based content
 - Filterable
- Online distribution
 - Billing engine
 - User subscriptions
- Vehicle diagnostics
 - Software delivered online



Challenge 4

- Times Pressures

- Started software evaluation in August 2014
- Started discussions with RMI supplier in August 2015
- Implemented RMI solution in parallel with changes to documentation process
- Regulation effective from January 2016

Solution 1

- Implement Standard ST4

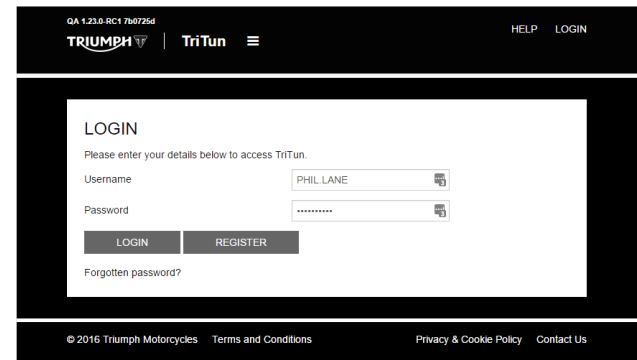
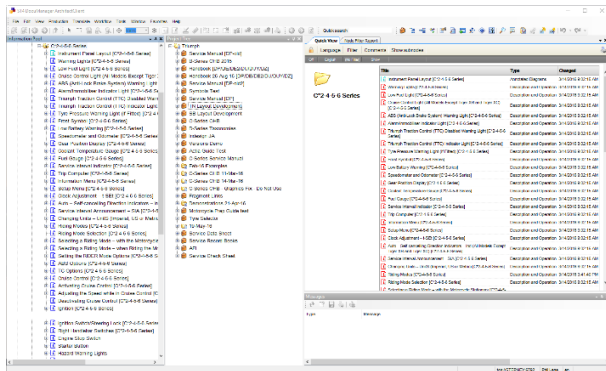
- ST4 selected in December 2014
- ST4 purchased in February 2015
- ST4 installed on site end of April 15
- First document produced in June 2015



Solution 2

- ST4 Custom Development

- Worked with Schema to provide native XML “production” output
- Established a test server at Triumph to ensure continuity during the testing phase
- Output XML from ST4
- Transfer to the offsite RMI solution

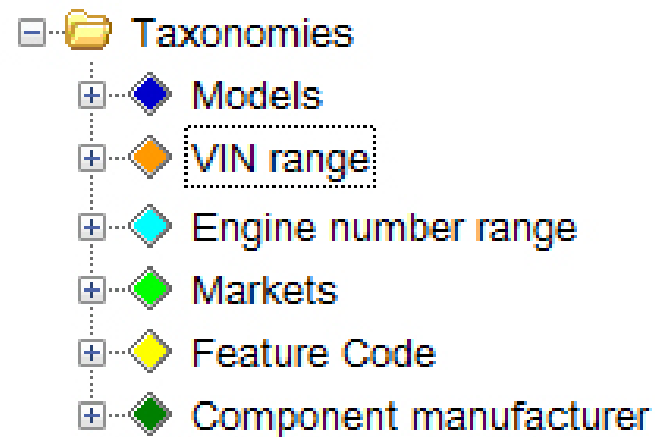


Solution 3

- ST4 Content Classification

- Content classifications:

- Taxonomy: 6 groups
- Properties:
 - Embargo date
 - User groups



Solution

- Generate Beautiful HTML

- XSLT to transform XML into HTML
- CSS to style the content and apply branding

Result - XML Export

SERVICE MANUAL

- Introduction
- General Information
- Service Tools
- Specifications
- Torque Wrench Settings
- Routings
- Routine Maintenance
- Engine Covers
- Cylinder Head
- Barrels and Pistons
- ▾ Clutch
 - Exploded View – Clutch Controls
 - Exploded View – Clutch
 - Clutch Cable - Removal
 - Clutch Cable - Inspection
 - Clutch Cable - Installation
 - Clutch - Removal
 - Friction Plate Inspection
 - Steel Plate Inspection
 - Clutch Pack - Height
 - Clutch - Installation
- Crankshaft
- Balancer
- Transmission
- Starter Drive and Sprag Clutch
- Lubrication
- Engine Removal and Installation
- Fuel System and Engine Management
- Cooling
- Front Suspension
- Rear Suspension

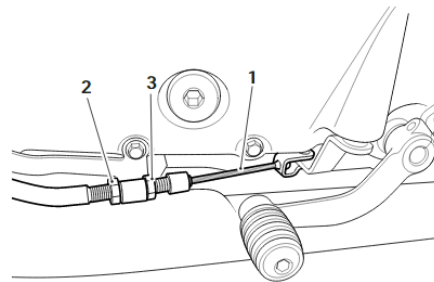
Clutch Cable - Installation



WARNING

Before starting work, ensure the motorcycle is stabilised and adequately supported. This will help prevent it from falling and causing injury to the operator or damage to the motorcycle.

1. Position the cable to the motorcycle following the same routing as noted during removal.
2. Attach the inner cable to the boss on the clutch actuating arm using a reversal of the removal process.
3. Refit the outer cable to the adjuster bracket at the clutch cover end.



1. Clutch cable

```
@class='VariableLink'][@label = $var-link  
edVariants/Variant[@id = $var-id]/text()  
orque-var</xsl:attribute></xsl:when>  
>  
$target[@class] />  
= 'Project://noderef[child::noderef[@id  
e[1]" />
```

Result

- Print Outputs

SCHEDULED MAINTENANCE CHECK SHEET (all models with 10,000 miles service intervals)



Customer Name	Registration Number	Model	Date
Date of Registration	VIN	Odometer Reading	Job Number
Bike Under Warranty? <input type="checkbox"/> Yes <input type="checkbox"/> No	Service Book Stamped? <input type="checkbox"/> Yes <input type="checkbox"/> No	Technician Name	

Carry out all the operations specified below at the required intervals. Additional operations must be carried out at the specified time/distance interval, whichever comes first. **IMPORTANT: Under severe operating conditions, certain items require more frequent servicing. Refer to the Owner's Handbook for further information.**

6,000 mile (10,000 km) service intervals (All models except Trophy, Trophy SE, Tiger Explorer, Rocket III, Rocket III Classic, Rocket III Touring & Rocket III Roadstar)																												
First Service - First 500 miles / 800 km / 1 Month (whichever comes first)	Annual Service - Every year	Additional items at specified mileage/date only, as indicated below																										
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<p>Note: The following notes must be referred to as necessary during servicing: Renew checked items if worn beyond the service limit. TRIPMASTER, WETPLATE, CE, CRASH PROTECTOR</p>																												

Owners Handbooks

Workshop Check Sheets

Summary of Project

- Outcomes

- Implemented ST4 and migrated content from FrameMaker
- Developed exchange of content between ST4 and RMI solution
- Devised a metadata strategy to enable tagging and filtering of content to satisfy the RMI regulations
- XSLT transformation of XML production

Summary of Project

- Challenges/Lessons Learned

- Four parties working together
- Communication was key
- Individual tracking systems
- Filtering performed at export stage

Summary of Project - Timescales

- ST4 installed
in April 2014
- Custom development started with Schema
in May 2015
- First Owner's Handbook produced
in June 2015
- First Service Manual produced
in October 2015
- XML RMI documentation uploaded
in January 2016

**CUSTOMISE
3 WEEKS**

**IMPLEMENT
10 MONTHS**

Summary of Project Timescales

Summary of Project

- Return on Investment

- Removed need to print Service Manuals
- Savings of between 50% and 70% on each project

ROI
1.5 YEARS

Next Steps

- Migrate more document types into ST4
- Support for 5 new languages
- Publish owner documentation online
- Deliver app-based content

Contact Details

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