

TATA STEEL



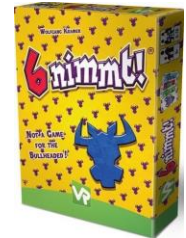
KNIME: The Data Analysis Multi-tool at Tata Steel

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Together we make the difference

Quick Introduction

- Data Scientist in R&D
- Tata Steel UK is a steel company based in South Wales
- Aim: to help people better understand our data
- Hobbies: Boardgames with colleagues



KNIME & Tata Steel

- Using KNIME for 10 years
- We currently use the KNIME Server
- We use KNIME for a variety of challenges across the business from large orchestration workflows to citizen data science applications.
- Plans to transition to the Business Hub



What do I mean by Multi-tool

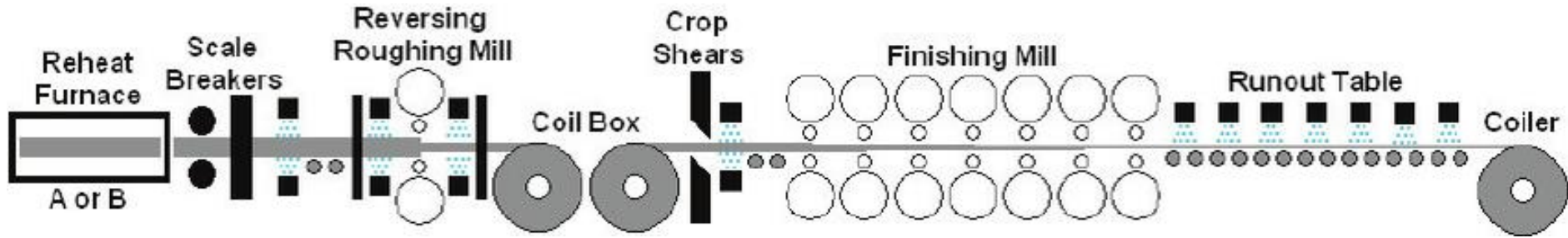


Examples



Example 1

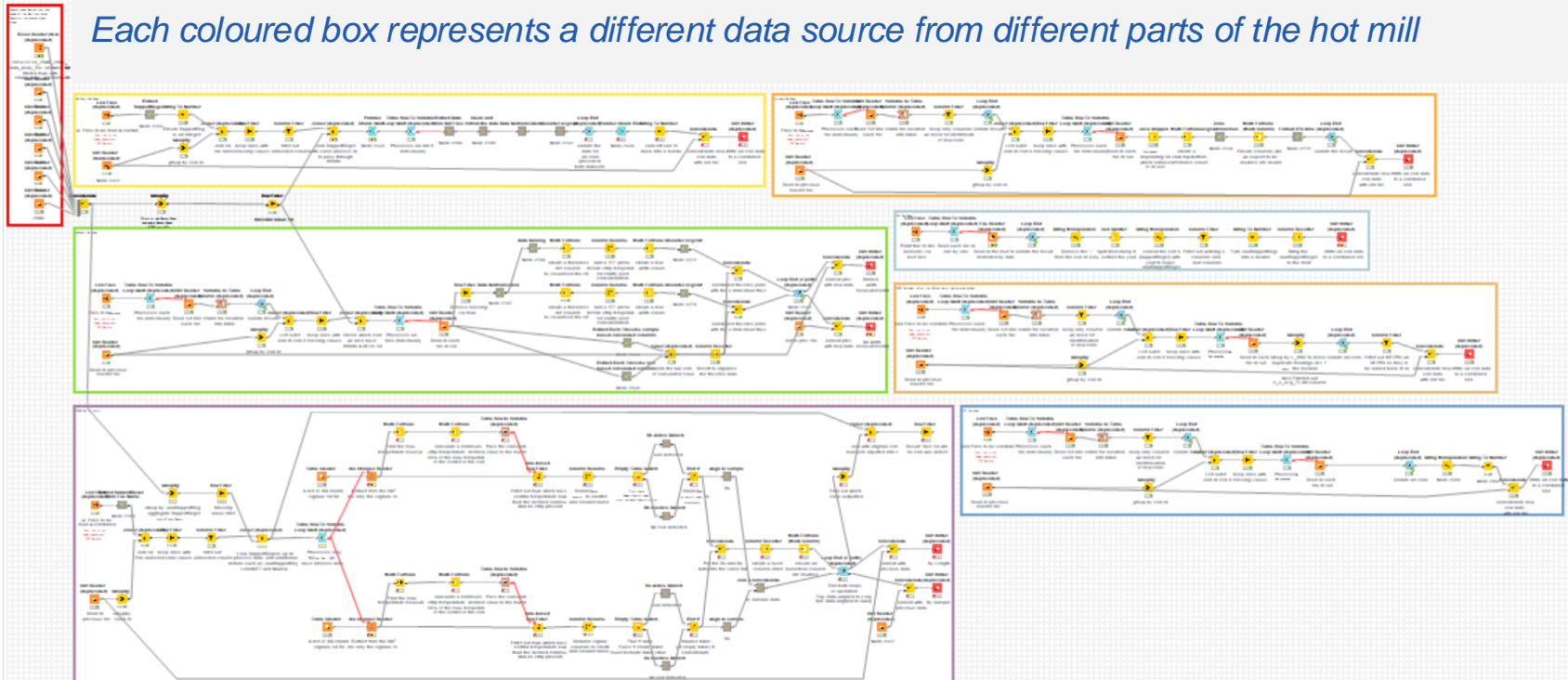
Data Source Merge And Align For Data Visualisation



Example 1

Data Source Merge And Align For Data Visualisation

Each coloured box represents a different data source from different parts of the hot mill



Example 1

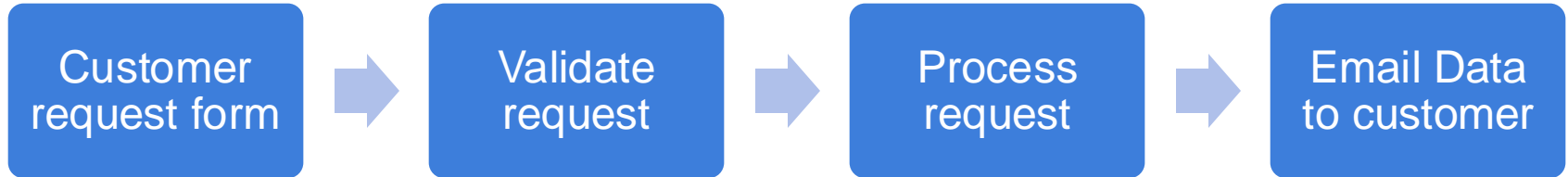
Data Source Merge And Align For Data Visualisation

- Without KNIME = Weeks of effort to extract each data set for analysis
- With KNIME = Hours, ready for data visualisation and analysis



Example 2

Mass Mailer For Carbon Border Adjustment Mechanism (CBAM) Reporting To Customers



A	B	C	D	E	F
Declarant Name	Commodity Code	Installation	Tata Steel UK Limited Account Manager	Email Recipient	
ABC GMBH	72082500	Port Talbot	firstname.lastname@tatasteelurope.com	firstname.lastname@abcgmbh.com	Example

Example 2

Mass Mailer For Carbon Border Adjustment Mechanism (CBAM) Reporting To Customers



Send Email to Customers and their Tata Account Managers

Process Declarant Request

Example 2

Mass Mailer For Carbon Border Adjustment Mechanism (CBAM) Reporting To Customers

- Without KNIME = Days
- With KNIME = 30 minutes
- This process is run quarterly



Example 3

Fourier Transformed Infrared Spectroscopy Statistics Calculator



Example 3

Fourier Transformed Infrared Spectroscopy Statistics Calculator

Step 1: Right click 1st gray node and select "Execute and open views"

Step 2: Complete form and click Close and select "Apply Settings Temporarily"

Step 3: Run metanode :)

Results will be in a Excel in your Spectra CSV folder

Execute and Open Views this node



Execute this to process files



Node 139

Execute and Open Views this node

Automatic FTIR Band Ratio Calculator

Folder Location
C:\Folder path

Absorbance or Transmittance
 Absorbance
 Transmittance

Peak Start: 2900 Peak End: 2950

Bump Start: 2800 Bump End: 3000

Reset Apply Close



Example 3

Fourier Transformed Infrared Spectroscopy Statistics Calculator

- Before = 3-5 minutes per sample, 45 minutes per data set
- After = 5 minutes per data set
- Calculates more than just the ratio
- Customisable for every project
- Precious time saved every time a new batch of samples arrive



Collaborative Data Exploration

- Work closer with the data experts
- Leveraging the speed of KNIME and creative problem solving
- Increase stakeholder involvement and buy in for any solution created.



Pair Programming

- Collaborating with KNIME skilled colleagues on a shared goal
- Involves bouncing ideas off each other, designing workflows and checking logic
- Allows colleagues to learn from one another and support each other's crazy ideas.



Teaching and certification

- Teach “excel every week” researcher = time saved
- Teach project collaborators = enables on demand model refresh
- During the KNIME 90 Day Certification Challenge, several colleagues certified at L1 & L2



Conclusion

- KNIME is a versatile tool which can be applied to solve a wide range of challenges
- Through teaching and collaboration, KNIME can be used to empower customers and stakeholders



Do you have any questions?

Tata Steel

R&D

www.tatasteelurope.com