



Validation of AAIM approach UK case study

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UK case study

- Major rail enhancement programme selected as basis for validation of RAGTIME outputs.
- Project is the Transpennine Route Upgrade (TRU) – a major rail corridor linking the cities of Manchester, Leeds and York.
- Currently at the 'single option selection' phase of the project lifecycle.







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Risk based approaches for asset integrity multimodal transport infrastructure management

A Route of Routes: the Network Scale





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Initial assessment of NR KPIs

★ NR Current Weak Points in Assessment





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NR interpretation of RAMSHEEP





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NR KPIs linked to 'RAMSHEEP'

RAGTIME

	1. Capacity		2. Capability	/			
Railway Performance	 Number of trains per day Train km per track km 		 Length of track Power Supply Line speed Loading Gauge (Freight, Passenger) Route Availability Gradient Train length 				
	3. Train performance	e 4.E	Environmental	5. Safety		6. Availability	7. Ambience
Service Performance	 Public Performance measure (PPM) Delay minutes Schedule 8 (delay costs) 			 FWI Risks and accidents based on precursor likelihood 			
Asset Performance	8. Reliability		9. Maintainability				
	• MTBSAF	Unplanned (un hoursMean Active R	In-forecasted or coster Repair Time (MART)	l) possession			
Asset Condition	10. Condition		11.	Remaining life	12. Utilisation		
	Condition measures specific to asset disciplines		• Ass (Se use	et remaining life rvice life minus d life)	Equivalent Million Gross Tonnes per Annum (EMGTPA)		



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Validation of GOVERNANCE METHODOLOGY FOR TENDER PROCESS



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Risk based approaches for asset integrity multimodal transport infrastructure management

Illustration of proposed validation approach

Project / Asset Life Cycle



• UK case study provides meaningful comparation between NR procedures and RAGTIME's.



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Validation of Financial, Economic and Risk Module: Risk Wizard Application



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Risk Management: Phases



- appetite
 - Decision on which mitigation will be implemented and to which extent
- UK case study provides meaningful comparation between NR procedures and RAGTIME's.

Evaluation of severity and



type,...)

RAGTIME

owner, by cause, by event

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impact



Validation of TECHNICAL MANAGEMENT PLAN methodology



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Illustration of RAGTIME validation approach



• Comparation with NR method for detecting faults, assessing risks and prioritizing mitigations at Network level.



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Validation of RAGTIME CLOUD-BASED PLATFORM FOR AAIM



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Mapping of KPIs onto Transpennine Route



 Comparation in average terms for the different approaches (RAMS, X-RAMS AND RAMSSHEEP)



RAGTIME

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Conclusions

- RAGTIME's KPIndex: RAMS, X-RAMS AND RAMSSHEEP
 - Comparation in average terms for the different approaches: the Transpenine route case
- Subsystem level validation:
 - Governance Module: Lean Based Procurement Tool
 - Financial, Economic and Risk Module: Risk Wizard Application
 - Technical Management Module: Technical Management Plan and Tools
- System level validation:
 - GIS modelling implementation for visualization





Thank you!



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