



# 5G Augmented Reality Digital Twin (5G ARDT)

The Gemini Call, 24/5/22





- We are the infrastructure owner for the Channel Tunnel Rail Link, with Network Rail High Speed working with us to operate and maintain HS1.
- It's a 109km route from London St. Pancras International, and calls at Stratford International, Ebbsfleet International and Ashford International
- Connects London to Continental Europe via Eurostar for passenger rail, and provides a freight link too.
- Trains can travel at speeds of up to 300km/h, and is the UK's only operational high-speed railway
- We have a 30-year concession from the UK Government to own this infrastructure
- We have a unique public-private partnership setup



About HS1





£2m fund  
over five years

12 Initiatives  
either delivered  
or in progress

£21m operational  
efficiencies  
identified to date

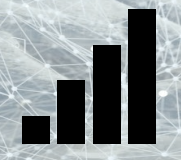
Research, Development and Innovation on High Speed 1







The first step towards a systemwide Railway Digital Twin



Included the power of a Private 5G Network



Rolled together data from assets, rolling stock (trains) and station control systems

IMPROVED EFFICIENCY

ENHANCED TRAINING

BETTER EXPERIENCE

IDENTIFIED AS A

FLAGSHIP  
PROJECT

BY INNOVATE UK



The University  
Of  
Sheffield.



5G ARDT







Cyclical Inspection at  
Set Frequencies and Times



Paper-Based  
Reporting



Slow to respond to changing  
demands and priorities

Operations and Maintenance



Complex Linkages

Engineering

Maintenance

Track

Civils

Electrification  
+ Plant

Signalling

Asset  
Management

Siloed Disciplines



Data

The problem we're trying to solve







What 5G ARDT looks like





What 5G ARDT looks like





Research and Development Portfolio Outputs



BIM and Information Management Implementation



Geospatial Tools and Mapping Data Integration



Common Data Environment Improvement and ISO19650 Compliance

What we will do next







THANK YOU



Scott Durno  
Information Manager  
High Speed 1

