

Rail Asset Management Summit 2018

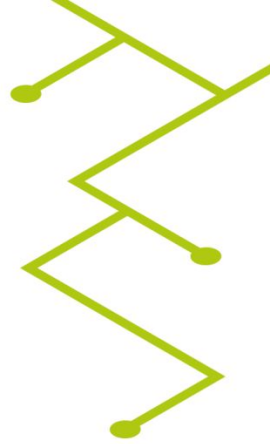
Rail Asset Management Summit

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2018

Tim Flower
Professional Head of Maintenance
Network Rail

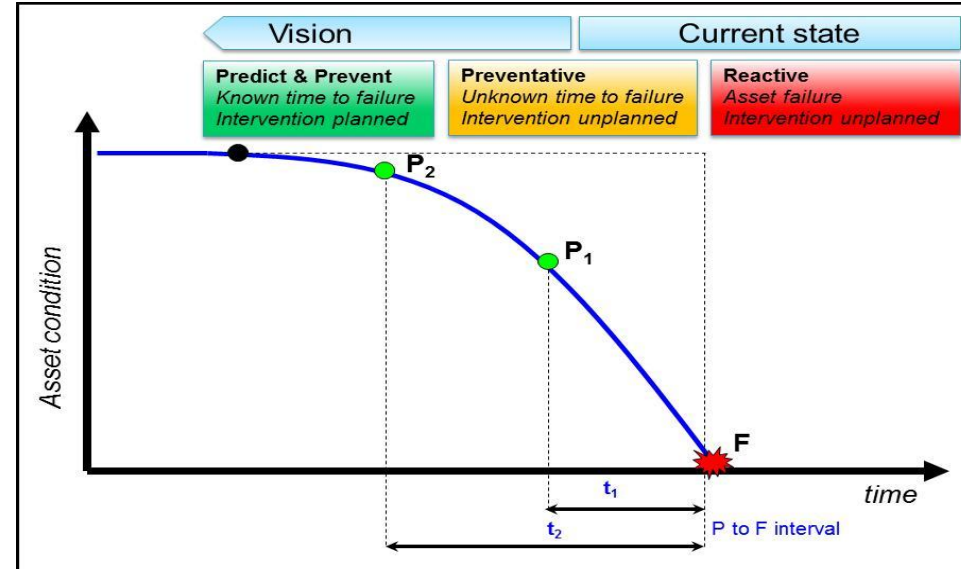
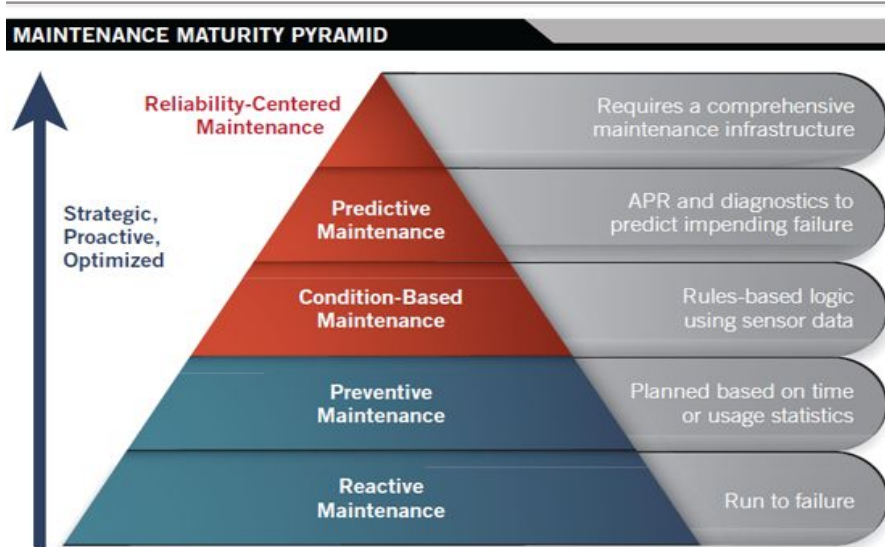




Network Rail's Intelligent Infrastructure Programme

Technical Roadmap

- Network Rail's current maintenance maturity is largely reactive
- CP4/5 Intelligent Infrastructure enables preventative maintenance on some asset types
- The CP6 Intelligent Infrastructure programme will expand our monitoring capability and deliver predict & prevent maintenance with innovative data analytics
- Better exploitation of Ellipse, systems integration and new planning tools will enable interventions to be planned based on known asset condition and degradation rates



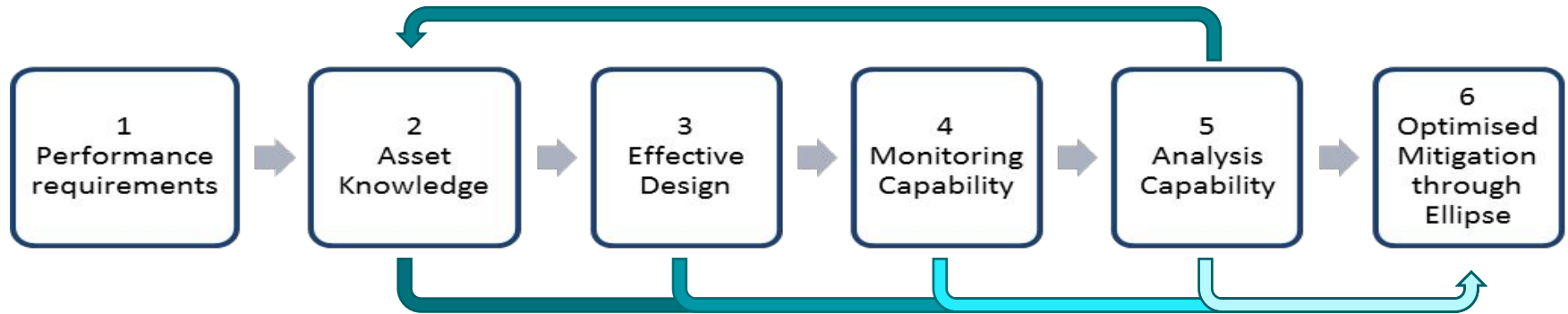
Programme Vision

“Safely and affordably improving asset availability, tracking towards zero service affecting failures”

Intelligent Infrastructure will improve asset management across Network Rail; eliminating failures through product and maintenance regime design and capturing, analysing and exploiting asset data to make better planning decisions about investment in our assets and drive efficiency.

Ultimately the goal is to improve the availability of our infrastructure by understanding what is likely to go wrong when and the impact a failure will have on the operational railway so we can intervene before it impacts train service.

Intelligent Infrastructure Approach



The basis for each project business case

Data Governance & Assurance framework

CP5 Ellipse Exploitation

Design for Reliability

Reliability Centred Maintenance

Train borne, embedded and vehicle monitoring

Industrialised autonomous systems

Prognostic models managed through an asset health system

Consistent operating model

Ellipse & System Exploitation

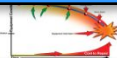
Programme Scope – Themes & Work Packages

BUSINESS PROCESSES

Decision Support & Analytics



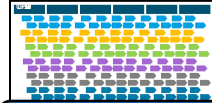
Defect & Fault Management



Predicting Failures & Degradation



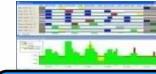
Asset Criticality (System Model)



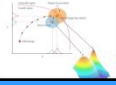
Long Term Work bank & RAMP Tool



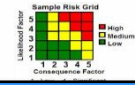
Work Delivery Planning (Basic)



Work Delivery Planning (Advanced)



Design for Reliability



Risk Based Maintenance



Integrated Timesheets & Work Recording



Paperless Working/Mobile Apps

DATA TO INTELLIGENCE



Buildings Asset Mgmt



WBS & Compliance Mgmt



Digital Drainage



Advanced Operational Reporting



Pantograph Monitoring

Unattended Measurement

Pantograph Cameras



S&C Dynamic Inspection



Embedded Monitoring



Tunnel Difcam



Level Crossing Power supplies



Circuit Breaker Trip Monitoring



National Aerial Survey Earthworks



Data Verification



Data Governance



BIM / Advanced Hand over / back 3D Railway



Cost Management

Programme Plan – High level

CP5			CP6				
2017	2018	2019	2020	2022	2023	2024	

Business Planning

- Stakeholder requirements
- Benefits hypotheses
- Route replay
- Programme development
- Cost planning
- Programme integration
- Business Plan Engagement
 - Group Finance
 - Routes
 - DRSAMS – benefits challenge
 - Asset Efficiency Group
 - Engineering
- Business Plan submission

Programme Mobilisation

- Identify
 - Programme Brief
 - Stakeholder Engagement
 - Change description
- CP5 Design / Deliver / Demonstrate
- CP6 High Level Definition
 - Stakeholder profiles
 - Programme Blueprint
- CP6 Detailed Definition
 - Benefits Profiles / strategy
 - Project Dossiers
 - Programme Organisation
- CP6 Design
 - Project Brief / Detailed Plan
- Procurement for CP6

Programme Delivery

- Tranche 1
 - Technical Development & Delivery
 - Training
 - Business change
 - Demonstrate Benefits
- Tranche 2
 - Technical Development & Delivery
 - Training
 - Business change
 - Demonstrate Benefits
- Tranche n
 - Technical Development & Delivery
 - Training
 - Business change
 - Demonstrate Benefits

Key Messages

1. This is a significant business transformation programme delivering strategic benefits in CP6 and beyond.
2. The CP6 Intelligent Infrastructure programme is being developed to support the need to deliver a significant change to our whole life asset management.
3. Programme scope is being developed based on the needs of business users and is consistent with Network Rail's strategic themes.
4. Reducing the exposure of staff to the operational railway and introducing more effective work planning will deliver safety improvements and demonstrates Safety and Performance go hand in hand.
5. The programme is an evolution of several existing workstreams which are brought together in a more holistic and coordinated cross functional effort.
6. Intelligent Infrastructure will fix the basics (data, systems, planning)
7. Innovation will enhance capabilities, especially in the areas of monitoring assets, 'big data' analytics and work planning
8. Benefits will pay back most of the investment in CP6, some carried over to CP7
9. It will be the vehicle to deliver all strategic asset management projects related to monitoring, analytics, planning and Ellipse in CP6