Office of Rail & Road and Network Rail

Independent Reporter - Lot 3

Review of Freight Delivery Metric (FDM)

Final | 24 October 2016

Job number 249917-00

Ove Arup & Partners Ltd
Scotstoun House
South Queensferry
EH30 9SE
United Kingdom
www.arup.com

ARUP

Document Verification

ARUP

Job title		Independent Reporter - Lot 3		**Job number** 249917-00
Document title		Review of Freight Delivery Metric (FDM)		**File reference**
Document ref				
Revision	**Date**			
Issue 1	6 Oct '16	**Filename**	FDM Review Report Issue Version 1.docx	
		Description		
			Prepared by	Checked by	Approved by
		Name	Keith Winder	Douglas Leeming	Stefan Sanders
Issue 2	14 Oct '16	**Filename**	FDM Review Report Issue Version 2.docx	
		Description		
			Prepared by	Checked by	Approved by
		Name	Keith Winder	Douglas Leeming	Stefan Sanders
Issue 3	19 Oct '16	**Filename**	FDM Review Report Issue Version 3.docx	
		Description		
			Prepared by	Checked by	Approved by
		Name	Keith Winder	Douglas Leeming	Stefan Sanders
Final Issue	24 Oct '16	**Filename**	FDM Review Report Final Version	
		Description	Final version following full review	
			Prepared by	Checked by	Approved by
		Name	Keith Winder	Douglas Leeming	Stefan Sanders

Issue Document Verification with Document ☐

Contents

			Page
1	**Introduction**		**2**
	1.1	Background	2
	1.2	Structure of the Report	2
2	**Methodology**		**3**
	2.1	Introduction	3
	2.2	Approach	3
3	**Findings**		**6**
	3.1	Introduction	6
	3.2	Procedures	6
	3.3	Data Capture 'Rules'	7
	3.4	Other Data Capture Issues	9
	3.5	Verification & Assurance Checks	11
4	**Analysis of Data**		**13**
	4.1	Introduction	13
	4.2	Activities	13
5	**Outcomes**		**18**
	5.1	Introduction	18
	5.2	Review Conclusions	18
	5.3	Study Recommendations	19

Appendices

Appendix A: Client Study Brief

Appendix B: Sampling Technical Note

Appendix C: Definition Letter

Appendix D: East Anglia Route MFSDD Protocol

Appendix E: Process Flow Charts

Appendix F: FDM Aggregation Process

Glossary

A2F	Arrival to Fifteen
BO	Business Objects
BOPSS	Business Objects Performance Systems Strategy
CP4	Control Period 4 (2009 – 2014)
CP5	Control Period 5 (2014 – 2019)
DBC	DB Cargo – a freight operating company
DRS	Direct Rail Services – a freight operating company
ECS	Empty Coaching Stock
FDM	Freight Delivery Metric
FL	Freightliner – a freight operating company
FOC	Freight Operating Company
FPM	Freight Performance Measure
MAA	Moving Annual Average
MFSDD	Management of Freight Services during Disruption
MOD	Ministry of Defence
NR	Network Rail
ORACLE	A business software package
ORR	Office of Rail and Road
PALADIN	A centralised storage of historic train movements (actual and planned), vehicle formation and loading, and delay details.
PSS	Performance Systems Strategy
ROSCO	Rolling Stock Leasing Company
SFC	Strategic Freight Corridor
STANOX	Station Number 'X'
TOC	Train Operating Company
TRUST	Train Running Systems TOPS
TSR	Temporary Speed Restriction
VSTP	Very Short Term Planning

1 Introduction

1.1 Background

It is generally accepted by the rail freight industry that the measure of Network Rail performance used in Control Period 4 did not provide a reliable indicator of delivery that could meaningfully influence behaviour. The change of approach to the Freight Delivery Metric (FDM), which is a Regulatory Performance output for Control Period 5, that considers the number of trains delayed by Network Rail by fifteen minutes or more at destination, is more closely linked to the measures of passenger train performance. As such it provides a quantity that can be more usefully tracked and analysed to drive improvements in performance. Being a Regulatory Output the quality of the measure is clearly important.

By its very nature, the recent introduction of the FDM means that it has little history, however it is clearly essential for its credibility that the measure can be relied upon to provide accurate and useful information regarding freight train operational performance. The outcome of this review must therefore demonstrate, through challenge, a robust assessment of the processes that have been developed and are currently employed by Network Rail to gather and process the data to feed through to the report provided to ORR.

1.2 Structure of the Report

Following this introductory section, the report describes the methodology that was adopted to undertake the study. This is followed in Section 3 by a review of the process and how it works in practice. This is followed by the analysis of the data. The final Section describes the outcomes from the review, includes the confidence grading of the measure and includes a number of recommendations.

2 Methodology

2.1 Introduction

This Section of the FDM Review report provides a description of the approach that was taken in the review.

2.2 Approach

2.2.1 Overall Methodology

The approach that was adopted for this commission was designed to provide an assessment of Network Rail's reporting processes, procedures and governance. This covered an examination of:

- The accuracy and reliability of the data used to produce the metric;
- The validity of the rules governing the production of the metric;
- The extent of the reliance on the delay attribution system;
- The impact of external factors on the metric;
- How the data is consolidated into reports for onward transmission to ORR; and
- The overall governance arrangements that are in place.

Our review took cognisance of the requirements in the Mandate (see Appendix A) as defined in the eight points in the Methodology list to underpin the planning and execution of the review.

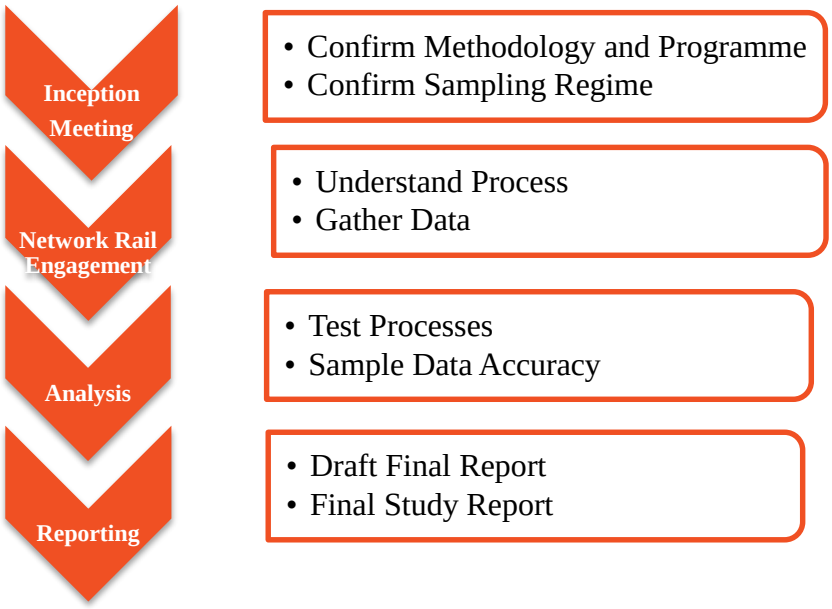
The methodology involved consideration of the associated process documentation, and a review of the data; both derived from engagement with the Freight Performance team, part of the Network Rail Freight and National Passenger Operator organisation. The purpose of the meeting was to:

- Clarify and flesh-out the documented processes to develop a more complete understanding of how these are applied;
- Understand how external factors are worked through in practice;
- Understand the means of data capture in particular understanding how delays are captured when it is not possible through automated means;
- Explore issues with the practicality of the metric in particular the inclusion of Very Short Term Planning (VSTP) movements; and
- Discuss the impact that the delay attribution process has on the outcomes.

The combination of these inputs was designed to provide the basis for an assessment of the reliability and accuracy of the FDM reporting, through the Confidence Grade categorisation.

Figure 2-1 provides an illustrated summary of our approach.

Figure 2-1: Overall Approach



2.2.2 Inception Meeting

An Inception Meeting was held early in the study with ORR and Network Rail representatives, the purpose of which was to:

- Confirm the proposed overall methodology and programme; and
- Agree the appropriate tolerances to be used in defining the level of sampling.

The outputs from this first activity were to:

- Develop relationships with ORR and Network Rail;
- Establish a clear understanding of the commission tasks and programme;
- Confirm the reporting arrangements;
- Identify the key members of the Network Rail Freight Performance team; and
- Agree the milestones and target dates for the project.

Notes of the Inception Meeting were subsequently shared and agreed between the attendees.

2.2.3 Engagement with Network Rail

The planned engagement with Network Rail was structured around a key meeting with representatives from the Freight Performance team. This was followed up by communication between the Network Rail data expert in this area and the study's statistician to agree a sampling methodology. The outcome of this dialogue was a Technical Note which defined the data sampling approach (see Appendix B).

In practice, the complete 2015/16 FDM dataset was utilised in the review.

Having established this methodology, a further meeting was arranged specifically to brief, and provide advice and guidance to our data analyst. All other follow up or clarification, where needed to understand further aspects of the regime, was undertaken in correspondence.

The opportunity to meet and discuss face-to-face the FDM process and data proved to be a very effective means of understanding the measure and teasing out its associated issues.

Following the meetings, the raw data supporting the reporting against this metric during 2015/16 was obtained from Network Rail as the basis of the further analysis.

2.2.4 Analysis

The analysis that was undertaken during the commission was based on two elements:

- An understanding of the process; and
- A review of the data handling to follow the prescribed process.

The engagement with Network Rail was the core source of understanding of the processes associated with the FDM. From this foundation the study reviewed the data and the way in which it is filtered to capture the applicable train movements and then take account of delay attribution to produce the measure. The steps in the filtering process were each tested to validate that the rules were being applied correctly.

2.2.5 Reporting

This report is the final output from the study review. It is supported by the previously issued records and Technical Notes as described above.

3 Findings

3.1 Introduction

This Section of the report details the findings of our review of the processes, procedures, and routines in use by Network Rail to generate the data which forms the basis of the FDM metric. This was the basis of the study's assessment of the reliability of the FDM.

3.2 Procedures

An important aspect of the review was to establish the formal definitions, systems, processes and procedures put in place by Network Rail to support the calculation of the FDM, and its subsequent reporting. Without formal structures and procedures, the treatment of data cannot be assured as consistent or reliable, and the existence of good quality, up to date processes and procedures is an important factor in the awarding of a satisfactory confidence grade. These procedures include:

- Definition of the metric – its purpose, what it measures, and what data is included / excluded from the measure;
- Data processes – description / instructions as to how the data is drawn down, from where, how it is aggregated / disaggregated; and
- Associated procedures and protocols that may impact upon applicable data.

3.2.1 Definition of the Metric

The definition of the metric evolved from discussions between Network Rail and freight operators which began in 2011, and initially envisaged the FDM as being a 'failure' metric i.e. percentage of trains failing the metric, and based on a T-30 minute threshold. The current evolution of the definition is contained as an Appendix to a July 2012 letter from Network Rail's Director Freight to stakeholders in the Freight Operating Companies, proposing a joint submission to ORR to revise the existing Freight Performance Measure. The correspondence is shown at Appendix C. Whilst this is regarded as the definitive current position regarding FDM definition, it falls short of being a formalised and structured internal standard or protocol.

3.2.2 Data Processes

The data that is used in the assessment of the FDM is derived from the following process;

- The metric is based on data from TRUST which is fed directly from the signalling system for the majority of the train timings. Departure and arrival at terminals are often off-network, consequently not reported by the signalling system automatically, and therefore rely on manual input at the respective terminals.
- The data is pulled into PALADIN, pushed to the ORACLE database then into Business Objects. The ORACLE database uses Business Objects (BOPSS) as a reporting tool.

- The ORACLE database stores selected parts of the PALADIN data in data-marts or 'universes' in Business Objects. The download from PALADIN does not contain all of the data relating to the individual train running since not all information is required for the FDM calculation i.e. most intermediate scheduled timing points are excluded.
- The calculation of the FDM relies on the synthesis of the data presented in BOPSS to ensure that the 'rules' applicable to the metric are correctly applied, and the data is reduced down to manageable portions where necessary.

3.2.3 Associated Procedures and Protocols

Management of Freight Services during Disruption (MFSDD)

MFSDD is a national initiative to standardise the management response to freight services during times of significant disruption. Under the Network Rail devolution initiative each Route has been given responsibility for drafting its own protocol to deliver MFSDD taking account of its individual characteristics and freight flows, but following a largely standardised template. The Routes and the FOCs are currently implementing the MFSDD Protocol. A copy of a sample Route protocol (for Anglia Route) is shown at Appendix D.

MFSDD service variations are entered manually from Schedule 8 historical data for 'Day 4' and subsequently 'Day 28' attributions. It has been confirmed through checking that, for Period 13 2015/6, these numbers had been correctly transferred across.

It was noted during discussions with Network Rail that a train which had its planned journey changed (diverted or terminated short of planned destination) as a result of the implementation of MFSDD, following an incident, would count as an FDM failure. However, if a supplementary service was then run to complete the journey, possibly under VSTP arrangements the following day, and arrived at destination more than fifteen minutes late, then it would again count as an FDM failure. This is an unintended consequence of the process, as the same train is effectively counted as a failure twice. In practice there are very few of these and the view is taken by Network Rail that the time and effort required to remove this double counting exceeds the perceived benefit.

3.3 Data Capture 'Rules'

The industry's TRUST train service monitoring and reporting system contains a wealth of data about every train operating on the UK infrastructure, in both real time and in a historical archive. There are about 600,000 trains operating every period, and in order to distil this data down to the relevant information required to support the FDM, a number of data rules are established within NR's data reporting platform, BOPSS. These are known as "queries" and effectively filter the "All Trains" database, to identify the trains which the fall within the terms of the measure by:

- *Excluding* irrelevant or non-applicable train data; and
- *Including* data relating only to applicable trains.

The 'Rules' (filters) are described in the following sub-sections.

3.3.1 Rule 1: Is it an applicable train?

The system must select only services operated by a commercial (applicable) Freight Operating Company (FOC), and these must be 'Commercial' freight services. These filters exclude all passenger (TOC) services, any services operated by non-commercial operators (such as tamper movements operated by a maintenance contractor) or any non-commercial and infrastructure trains operated by an applicable FOC. The filter does, however, allow locomotive hauled ECS moving from works to a passenger operator depot, operated by a commercial freight company under a commercial contract with a passenger TOC or ROSCO, but it would exclude normal ECS movements by passenger TOCs between depots and stations

The 'Commercial Freight' filter is achieved by the system comparing the train schedules against the eight-digit service code that is principally used for track access billing. Any inconsistencies here will be highlighted by a rejected service code with an 'XX' designation. This may occur for a number of reasons, such as incorrect coding of a VSTP schedule, a recent service code change due to a new Operator being appointed, or an 'active' schedule which did not actually run. Typically, there are a hundred or so 'Service Code XX' rejections per four week period. These are manually corrected where possible by Network Rail. Such errors have to be picked up within eight days and corrected in TRUST before data capture to PALADIN / ORACLE. Although TRUST holds data for fourteen days beyond 'day eight', the data is 'read-only' and cannot be amended.

The filters also remove light locomotive (Class 0 trains in TRUST). Light locomotives have always been excluded from the regulatory measure, and this 'rule' is retained for consistency with previous practice.

Table 3-1 shows some examples of the parties to a delay and whether the event would be a qualifying delay in terms of FDM.

Table 3-1: Examples of Qualifying and Non-Qualifying Delay Events

Victim Operator	Operator Type	Responsible Operator	Operator Type	FDM qualifying delay
DB Cargo	Commercial FOC	DB Cargo	Commercial FOC	No
DB Cargo	Commercial FOC	GB Railfreight	Commercial FOC	No
DB Cargo	Commercial FOC	DRS Infrastructure	Ballast	Yes
DB Cargo	Commercial FOC	Harsco	Yellow Plant	Yes
DB Cargo	Commercial FOC	Virgin East Coast	Commercial TOC	Yes
DB Cargo	Commercial FOC	West Coast Railways Ltd.	Commercial TOC Charter Train	Yes

3.3.2 Rule 2: Is the Service Cancelled or Part Cancelled?

The train has to have run to its complete schedule i.e. not terminated short or started away from Planned Origin. The train must have an origin and destination time, and the actual distance run must be broadly equal to the planned miles. If it is not then the train is considered to be a cancellation or a part cancellation and is excluded from the applicable train count for FDM. This

is to prevent double counting, as cancellation data is drawn from the Track Access Billing process and is calculated separately (see section 3.4 below).

3.3.3 Rule 3: Attribution

This rule embraces a number of filters; a geography filter excludes delay locations under codes EK (East London Line) and HO (Chiltern) as these areas are TfL controlled non-regulated railways; private operated railway locations are also excluded. It also considers the responsible organisation coding and excludes certain operator codes relative to commercial FOC on commercial FOC delays. It also excludes '801' coded delays (P code 'planned' delays, associated with the Rules of the Plan TSRs).

3.3.4 Rule 4: Lateness

A train can only be counted as a FDM 'failure' for punctuality if it is a commercial freight service which ran its scheduled distance, is fifteen minutes or more late at its destination, and had accumulated fifteen or more of Network Rail attributed delay. In Business Objects, the 'Within 15' flag is binary – fifteen or more late or not - with any services failing to run their scheduled distance removed under Rule 2 above.

3.4 Other Data Capture Issues

The following paragraphs describe a series of issues associated with the capture, filtering and manipulation of the data.

3.4.1 FDM Aggregator Process

This process note is an informal document, owned by the Freight Performance team and is dated 2nd April 2014. It provides a description of the process for the derivation and reporting of FDM at various stages, for example:

- Predicted;
- Provisional; and
- Confirmed.

The note has not been formally reviewed since drafting, but was stated to be current and comprehensive. The note is shown at Appendix F.

3.4.2 Cancellations Data

Cancellation data is not recorded fully in TRUST, and a different method of gathering reliable data was recognised as necessary.

The applicable cancelled services are provided from another section within Network Rail, which draws data from the Track Access billing system to provide a robust record of the cancelled, and service variation event train reporting numbers, that fall within the FDM applicable rules. Every

Network Rail caused cancellation or event-driven service variation generates an entitlement for the FOC to claim compensation under the terms of their access contract. The claims database provides a useful corroboration for the affected trains compiled from the billing system. Flow charts are used to validate claims for cancellation or service variation; these are shown at Appendix E. It is noted that inter-modal, MOD, and Royal Mail cancellations count as single trains (because they are always considered 'loaded'), whilst other traffic counts as two services (since these services are assumed as loaded only in one direction, and the empty leg is not otherwise captured within the system).

3.4.3 Departure and Arrival Times

Many freight trains depart from, and arrive at, yards and sidings which are off the Network Rail controlled infrastructure where the recording and reporting of departure or arrival can only be achieved by 'manual' means. Inevitably, the involvement of staff in this process – especially busy members of staff who have a range of duties and responsibilities which may demand attention at the time when recording of perishable facts such as departure or arrival should be undertaken – imports a degree of risk to the accuracy of this information. Almost universally, this information is recorded by staff not employed by Network Rail, being generally FOC or private siding operator staff, and is regularly not recorded at all.

To overcome this problem, TRUST can usually produce and record an 'assumed' departure and / or arrival time based on:

- First time (for a departure) or last time (for an arrival) that the train is auto-reported into TRUST for the train concerned on the Network Rail infrastructure; and
- Normal running time between first / last auto-reporting point and departure point / arrival point.

These arrangements are accepted by the FOCs as a good proxy for actual departure and arrival times, and are likely to be at least as accurate as the default manual methods normally in use.

3.4.4 VSTP Schedules

The data quality issues surrounding Very Short Term Planning (VSTP) schedules and movements are well known and recognised in the industry. FOCs can and do, quite legitimately, call for schedules for additional or special trains at short notice, and Network Rail is reliant on the FOC and the relevant Network Rail Control Office to produce a robust schedule with all the necessary information included within it in time for the movement to take place. These can be 'commercial' freight trains, infrastructure trains, or other non-commercial movements. Much of the time, the VSTP schedule is a recognisable movement of established traffic required to run on a different day, or in a recognised but different path from normal, in which case the parties will be able to utilise an existing templated schedule 'off the shelf'. In other cases, the movement could be a 'one off' for example a special positioning movement of vehicles for a breakdown train, or a special MOD train, some of which may require bespoke schedules at short notice.

Once again, the involvement of staff in these arrangements imports risk of data error or inaccuracy. From an FDM perspective, the risk is that a train is included as a 'Commercial' freight service when in fact it isn't, or vice versa; or that a wrongly coded VSTP service generates delay which is

incorrectly recorded or attributed for the FDM metric. Inevitably, the urgency with which some of these schedules have to be created and input, and the temptation to cut and paste an 'old' but ostensibly applicable schedule, can and does lead to coding, or other errors in these kind of schedules.

The mitigation for such errors or inaccuracies is that failure to enter a correct train service code, origin or destination STANOX code, or train service headcode will usually lead to the train being 'rejected' by the reporting system, PSS, and coded 'XX' or '999' in the archive, thereby indicating a problem for further investigation. The Freight Performance team does investigate all such coding occurrences, with a view to rectifying the data discrepancy. As noted earlier, provided any changes to the historic record are undertaken within eight days, these errors can be corrected. A very small number of discrepancies cannot be rectified due to lack of data, for a variety of reasons.

As part of the analysis of data, the study has sought to quantify the likely scale of this problem, details of which are shown in Section 4 below. A review of Period 13, 2015/6 data was undertaken which identified a hundred trains rejected for incorrect coding. These services were therefore excluded from the FDM calculation. In total, there were 42,616 non-passenger trains within PSS, of which 11,908 are 'trains ran' for the FDM calculation. Even if all of these hundred trains had been erroneously omitted from the FDM metric, this would represent an inaccuracy level of only 0.23% for the period and, by extrapolation, for the year.

3.4.5 Commercial FOC on Commercial FOC Cancellations

As with Commercial FOC on Commercial FOC delays, these are excludable from the FDM metric. However, as most of these events occur inside yards, private sidings and ports, where information to Network Rail may not be the best, Network Rail acknowledge that some FOC on FOC cancellations almost certainly creep into the metric as Network Rail failures. However, as the numbers are very small – no more than a handful of trains each period – the time and effort required to run these to earth and ensure proper attribution is far greater than the perceived benefit. As a consequence, Network Rail takes the 'hit' inside the metric currently whilst keeping the position under review.

3.4.6 "Active" Schedules Not Run

Within PSS, a significant volume of data exists relating to services which had an "active" schedule but never operated, usually a result of cancellation due to traffic or other commercial reasons. These services will have planned departure and arrival times, but no actual times or route mileage recorded. The default position therefore is that these records are excluded from the metric. In the detailed review of Period 13, 2015/6 data, 13,173 of the total of 42,616 non-passenger records in PSS were for fully cancelled "active" schedules. A further 396 records related to services without origin or destination times, which are deemed to be part cancellations and are therefore also excluded from the 'applicable' data.

3.5 Verification & Assurance Checks

FDM is a metric calculated by isolating 'applicable' trains and relevant information from a database containing thousands of 'non-applicable' train service details. There is very limited

review or check by the Network Rail Freight Performance team of data excluded by BOPSS queries, primarily because the volume of 'excluded' data is, by definition, very large, and there is confidence in Network Rail that the BOPSS queries actually work as intended.

In order to validate this assertion Network Rail has undertaken, at the study's request, a number of data runs with filters turned off in order that we could see and review the base data. From this it has been possible to review, and undertake a number of checks on train service data 'included' in the metric, and train service data 'excluded' from the metric.

'Included' data is always visible to the Freight Performance team, and a visual check of this data is undertaken each period. Occasionally, errors are spotted (sometimes too late to correct), but these are few in number, as the filters (or queries) are acknowledged as being robust, and the ancillary processes tend to weed out other compatibility errors. By contrast, 'excluded' data, by its nature, is not routinely available to Network Rail staff, and no verification or assurance checks are undertaken. For the purposes of this Reporter review, the data runs with filters turned off have been particularly valuable – we have noted no substantive errors or inaccuracies in the data, beyond the process limitations identified in Sections 3.2.3 and 3.4 above. The study has been able to broadly assess the scale associated with these limitations in awarding a Confidence Rating.

No independent verification of the cancellations data drawn from the track access billing process has been undertaken, but it is acknowledged that billing and claims databases are almost certainly the most reliable data sources for this information which cannot be reliably sourced from TRUST.

3.6 Management of the FDM Process

During the course of the engagement with Network Rail to understand the processes and data, it became clear that there was a limited pool of knowledge of the FDM system, how it worked and the processes to achieve the output. This was confirmed in discussions and evidenced by the reliance on certain key individuals to input to the review. It is considered that this could present a risk to the measure if personnel changes were to take place without supporting documentation and understanding being more widely available.

4 Analysis of Data

4.1 Introduction

Section 3 of the report reviewed the reliability of the FDM from the perspective of the processes. This Section of the report describes the analysis that was undertaken to support the formulation of a view on accuracy of the FDM.

4.2 Activities

4.2.1 Overview

The analysis was based on a process and calculation review of the 2015/6 dataset focusing on a detailed review of one period (Period 13) to test the working of the filters applied in BOPSS, and to review other data excluded from the FDM. The choice of period was not critical to the outcome of the review since the analysis was checking that the manipulation of the data was correct rather than looking for the outcome of any particular period.

4.2.2 Step 1: Trains included in Metric

Network Rail provided details of all non-passenger trains within BOPSS for period 13 in 2015/16 to review the filters applied to generate the list of freight services that ran and which were eligible to be included in the FDM regime (file ref: "*P1613 train list with exclusions 20160831.xls"*).

There were 42,616 non-passenger trains within BOPSS, of which 11,908 (28%) are 'trains ran' for the FDM calculation. The 30,708 trains that were excluded from the metric are summarised below. In each row, the train numbers exclude those which have already appeared above as a result of being categorised under multiple reasons (e.g. the number of 'light loco moves' excludes Class 0 trains with a non-commercial or unknown operator type).

The results of the breakdown are shown in Table 4-1.

Table 4-1: Summary of Train Exclusion

Reason	Number of Trains	Notes
Operator Type 'non-commercial'	9,493	Exclude operators that are non-commercial (i.e. infrastructure and engineering trains such as DBC Infrastructure, Colas infrastructure, etc). List of operators appearing as commercial / non-commercial reviewed to confirm appropriate.
Operator 'unknown'	100	Invalid service code entered when schedule created, so unknown operator in PSS (marked "XX"). These are not included within FDM and Network Rail confirmed these are usually very low in number.
Class 0 light loco movements	7,261	These moves are not included in the FDM calculation.
Actual Origin or Destination Location not populated	13,569	These are either fully cancelled or partially cancelled, so not relevant. Relevant cancelled trains are captured from Schedule 8 reports. In P13, 13,173 out of 13,569 had no actual schedule information, so fully cancelled. The remaining 396 were part cancelled (187 had no actual destination time, 87 had no actual origin time, and 122 had different actual origin or destination compared to the planned schedule).
Actual miles do not equal planned miles	90	Trains that have not run planned distance and all terminated at a different location to the planned schedule, so part cancelled (see above).
Non-commercial service code	191	DB Cargo, DRS and Freightliner Intermodal run a very small number of trains under both commercial and non-commercial service codes. Those trains allocated to non-commercial trains are excluded from the metric: • DBC: 177 out of 7,049 trains excluded • DRS: 13 out of 384 trains excluded • FL Intermodal: 1 out of 1,738 trains excluded
Planned origin or destination time not populated	4	Train does not have a valid schedule to measure against, so excluded from FDM. Network Rail confirmed these are usually very low in number
TOTAL	**30,708**	

4.2.3 Step 2: Trains Ran which fail FDM

For Period 13 in 2015/16 Network Rail provided an extract from PSS for the 11,908 trains which ran, that are applicable for the FDM (i.e. Commercial Freight services), with delay minutes appended (*"ORR Reporter A2F (0) Data - P1613 train list will all delay.xls"*). This allowed a recalculation to be done on how many of these trains failed the FDM through:

- Arriving at destination fifteen or more minutes late; AND
- Incurred fifteen or more minutes of eligible attributed delay (all Network Rail attributed delay except that caused by other commercial freight services).

As part of the check the punctuality and eligible attributed delay minutes for each train based on this file was recalculated. This independent check of the FDM confirmed that it had been correctly

calculated and that 515 trains out of 11,908 had failed the measure meaning that 95.7% of applicable trains arrived within the fifteen minute lateness band.

4.2.4 Step 3: Trains Ran for full year 2015/16

Details of all trains that ran which were eligible for the FDM in each period of 2015/16 were provided by Network Rail in 13 files ("*A2F (0) Data - train list for SSU P16##.xls*"). The study confirmed the number of trains for Period 13 matches above calculations (11,908) – and reviewed number of trains in each period to ensure appear sensible and consistent, as summarised in Table 4-2.

Table 4-2: Number of Applicable Trains

Financial Year and Period	Trains Ran	Days in Period	Average Trains per Day
2015/16_P01	16859	32	527
2015/16_P02	14196	28	507
2015/16_P03	14729	28	526
2015/16_P04	13919	28	497
2015/16_P05	13795	28	493
2015/16_P06	14026	28	501
2015/16_P07	14729	28	526
2015/16_P08	15518	28	554
2015/16_P09	15299	28	546
2015/16_P10	10431	28	373
2015/16_P11	13549	28	484
2015/16_P12	13558	28	484
2015/16_P13	11908	26	458

4.2.5 Step 4: Cancelled Trains

Network Rail confirmed that trains cancelled due to Network Rail causes are captured directly from the Schedule 8 reports, rather than TRUST. These are subject to review within Network Rail before acceptance, and are manually applied into the FDM calculation.

Network Rail provided a sample summary of cancelled trains for period 13 in 2015/16 (*"FDM for SFC 2015 P13.xls"*). This showed cancelled trains, including those which were rescheduled under "Management of Freight Services during Disruption" (MFSDD) – so were service variations (and fail the FDM).

It was noted from discussions with Network Rail that:

- Intermodal / Royal Mail / MOD services are expected to be loaded in each direction, and only cancellations of loaded freight trains can be claimed under Schedule 8. Therefore each leg

cancelled will appear in the Schedule 8 report. As such the total number of cancellations is the number of trains which appears in this report.

- All other freight services are assumed to travel loaded in one direction and empty in the other. Therefore a cancellation appearing in the Schedule 8 report will also incur a cancellation of the return empty leg. This will not appear in the Schedule 8 report but is relevant for the FDM. Therefore, the number of these cancellations appearing in the Schedule 8 report are doubled in the calculation of the FDM.

4.2.6 Step 5: Transfer of Data into Aggregator Spreadsheet and Calculation Review

The aggregator spreadsheet, which is used to calculate the FDM, was provided by Network Rail (*"FDM national aggregator 15 mins.xls"*). It was noted that this is used to firstly calculate the National metric, then the metric for each of the twenty-two Strategic Freight Corridors (SFC). This review is concerned only with the National metric, and so attention has focused on this calculation only.

- "Trains Ran" this confirmed the number of trains ran in this spreadsheet matches the files provided, as reviewed in Step 3.
- "Delayed Train" it was noted that the number of trains which ran and that failed the FDM metric in Period 13 in 2015/16 was 517 in this spreadsheet. This compared with 515 in the information provided for Step 2. It was found that the additional two trains were caused by incident dispute resolution changes since the Period 13 data was initially calculated. To cover this Network Rail run a full delay refresh from the start of the Control Period. Going forward this will always cover two complete years plus the periods in the current year.
- Cancelled trains are entered manually into the spreadsheet, based on Schedule 8 reports. The study confirmed that the numbers appearing in the aggregator spreadsheet for P13 had been correctly transferred from the Schedule 8 report.
- MFSDD service variations are also entered manually from the Schedule 8 report. Again it was confirmed through checking that for P13 these numbers had been correctly transferred across. It was noted that if a service is terminated short due to disruption, it will appear as a part cancellation (and therefore, as an FDM failure). However, once the railway is reopened, the train will continue to destination with a new (VSTP) schedule and if it arrives more than fifteen minutes late at destination, it will again be an FDM failure. This is an unintended consequence of the MFSDD protocol but as there are very few such instances. The view in Network Rail is that there are so few of such events, that they do not go through and remove this double counting. It was confirmed that there were 652 MFSDD service variations in all of 2015/16. Overall, the MFSDD process has been applied to 0.4% of all FDM qualifying trains that ran.

The calculation process has been reviewed and it has been confirmed that it matches the definition of the FDM. It is noted that the FDM is calculated based on summing information for each Operator in this spreadsheet. The figures have been checked and confirmed by the study.

4.2.7 Other Miscellaneous

It was noted in the Aggregator Process Note (*"FDM Aggregator Process Note.doc"*) that the formula for the calculation (in paragraph 1.3) is stated as:

$$\frac{\sum \text{NR delayed trains} + \sum \text{NR assumed cancelled trains} + \sum \text{NR caused service variations}}{\sum \text{trains run} + \sum \text{NR assumed cancelled trains}}$$

It is considered that this is an error and that the formula should be:

$$1 - \frac{\sum \text{NR delayed trains} + \sum \text{NR assumed cancelled trains} + \sum \text{NR caused service variations}}{\sum \text{trains run} + \sum \text{NR assumed cancelled trains}}$$

5 Outcomes

5.1 Introduction

This Section of the report gives the conclusions of the review including the confidence grading for the measure. It also contains the study recommendations and the predicted impact that they could have.

5.2 Review Conclusions

5.2.1 Overall Outcome

During the review the checks that were undertaken on the process revealed no systems, technical or arithmetic errors in the processing of the 2015/6 FDM datasets.

It was however noted that various data compromises exist as described in Section 4 and summarised in the following bullets:

- MFSDD 'double counts' *(0.4%)*;
- FDM Aggregator Process, not reviewed since inception four years (approximately) ago *(not quantified)*;
- Cancellations data sourced outside the automated TRUST system, and manually calculated *(not quantified)*;
- Departure and Arrival times input manually, and estimated when not input *(not quantified)*;
- VSTP schedules containing coding errors *(0.23%)*; and
- FOC on FOC cancellations included by default *(negligible)*.

Each of the foregoing points was discussed with Network Rail. The data relating to these compromises was reviewed for scale and scope, where possible, and an attempt made to quantify the number of trains likely to be affected each period, based on the study's analysis of the 2015/6 dataset. The percentages are shown above in parentheses as the number of affected trains as a proportion of total number of FDM applicable trains. Some of the data simply cannot be verified without outdoor physical checks of manually recorded information, however this was outside the scope of the study.

A number of these data compromises – such as cancellations data sourced from outside TRUST, manual input of arrival / departure times, and FOC on FOC cancellations are known and understood by Network Rail's freight stakeholders, and are generally recognised (or were when the metric was designed) as unavoidable, and the best arrangement that can be devised with the current technology, systems and operational environment.

Even assuming a material error level of 0.2% for each of these compromise areas (approximately twenty-four trains per period each), and assuming that compromises for each quantified area related to wholly different services, the aggregate level of absolute worst case error would be no

more than 1.23% of applicable trains per period, and by proxy, per annum. The errors could be 'right side', recorded as FDM failures when, in fact, they were not; or 'wrong side', recorded as FDM success when they were actually FDM failures. Whilst there are no grounds for believing that the two types of error will cancel each other out, it would not be unreasonable to assume a net error risk of half the total shown above – say, 0.62%. This assumption forms the basis of the Confidence Grading shown in section 5.2.2 below.

5.2.2 Confidence Grading

The measure grading regime is described in Appendix 3 of the Study Brief (Appendix A to this report). The FDM measure is awarded an alpha-numeric grade of the reliability and accuracy of the data and its associated processes.

The Freight Delivery Metric is awarded a 'B' grade for reliability.

An 'A' grading would be achievable when:

- The procedures and protocols in use are formalised, and a systematic programme of internal review to ensure currency is maintained; and
- Structured reviews of data included and excluded from FDM are undertaken, recorded, and shared with stakeholders. Any material variances, or unexpected findings in the datasets should be investigated, and outcomes / conclusions subject to debate and challenge by stakeholders.

The Freight Delivery Metric is awarded a '1' for accuracy.

This is because the assessed and potential data inaccuracy falls in the range of 0.1% to 1%. The present systems and processes in place for producing the FDM are almost certainly at a level which could not be significantly improved, and almost certainly not to a level which would allow an award of '1*' (accuracy better than 0.1%).

5.3 Study Recommendations

Based on the review as described in the previous sections the study has identified a small number of recommendations. These are outlined in Table 5-1.

Table 5-1: Study Recommendation

Reference	Recommendation	Benefits	Network Rail Data Champion	Due Date
L3 AR 001/01	Get the processes and documentation reviewed, formalised and up to date	This would underpin a more consistent approach to the process, supports the training of staff, and backs up the control of change and review	Jonathan Drea	Jan '17
L3 AR 001/02	Undertake some internal, structured data checks on both 'included' and 'excluded' data for FDM	Improve understanding of the short-comings of the system and the levels of error, and validate historic assumptions relating to scale of data errors	Jonathan Drea	Apr '17
L3 AR 001/03	Training up / developing other personnel to undertake specialist functions in relation to FDM within the Freight Performance team (for example, cover for the Freight Performance Analyst and Freight Performance Regime Specialist.)	Greater level of robustness in the process in the event of staff changes or non-availability for periods	Jonathan Drea	Apr '17

It is considered that should the recommendations identified in Table 5-1 be accepted and acted upon, the confidence grading for the measure would merit an upgrade to 'A1' at the next Reporter review.

Appendix A

Mandate

Title	Review of Freight Delivery Metric (FDM)
Unique Mandate Reference Number	L3 AR 001
Date	24th February 2016
ORR Lot Lead	Peter Moran
ORR lead for this inquiry	Peter Moran
Network Rail Lot Lead	Jon Haskins
Network Rail lead for this inquiry	Rachel Gilliland

Background

The Freight Delivery Metric (FDM) was introduced as the regulatory performance output for freight in CP5 and was developed in agreement with the Freight Joint Board. It has a good level of industry support as it more accurately reflects freight customer expectations compared to previous measures such as freight delays per 100 train kilometres (CP4 regulated measure) and freight performance measure[1].
It measures the percentage of freight trains arriving at their destination within 15 minutes of scheduled time, covering only those trains that are subject to Network Rail caused delays. This aligned with the Independent Reporter's review of CP4 regulated outputs[2], which concluded that a new measure be created to more accurately reflect the impact of Network Rail on freight flows.
In addition to the national figure being a regulated output for CP5, the data is also disaggregated to Strategic Freight Corridor[3] level, which is reported as a CP5 indicator.

Purpose

As the new regulated target for freight performance during Control Period 5, it is critical that the Office of Rail and Road (ORR) has assurance of the quality of this data which offers stakeholders key headlines on industry performance.

Scope

Under this mandate the reporter should:

[1] Freight Performance Measure (FPM) was introduced during CP4 as a PPM equivalent for freight. It differed from FDM as it calculated the proportion of trains arriving within 10 minutes of scheduled arrival time and its scope included all trains, rather than just Network Rail caused delay.
[2] Arup review of CP4 regulated outputs - http://orr.gov.uk/__data/assets/pdf_file/0015/1194/arup-cp4-regulated-outputs-review-010812.pdf
[3] A list of Strategic Freight Corridors is in table 187 of Network Rail's Delivery Plan http://www.networkrail.co.uk/Network-Rails-Delivery-Plan-for-CP5.pdf

- Review and comment on the processes and procedures by which Network Rail captures, calculates and records the FDM at Strategic Freight Corridor level;
- Review and comment on the processes and procedures by which Network Rail aggregates data to National level.
- Review all relevant documentation and systems and comment on their fitness for purpose;
- Review and comment on the reliability, quality, consistency, completeness and accuracy of reported data;
- Present a confidence grading for both the system reliability and data accuracy of FDM; and
- Make recommendations on areas of improvement for the FDM.

Methodology

As part of this review the reporter will undertake the following activities:

1. Attend a kick-off meeting with ORR and Network Rail to confirm the methodology and programme;
2. Work with Network Rail and ORR to identify and agree appropriate tolerances for assessing the accuracy of reporting
3. Engage with NR's representatives with responsibility for the Strategic Freight Corridors and the Centre to assess their processes and practices for the collation and calculation of FDM;
4. Review all relevant documentation and systems used in the collation of periodic FDM reporting and comment on their quality and fitness for purpose;
5. Review Network Rail's audit and assurance processes in place to ensure they are embedded and effective;
6. Review the periodic data reported to ORR in 2014-15 and assess its accuracy using a statistically significant sample of data, where required. An example of the data currently reported to ORR is in **Appendix 2;**
7. Having agreed appropriate tolerances, establish a system reliability and data accuracy confidence grading for FDM in line with the grading system in **Appendix 3**; and
8. Prepare and submit draft and final reports, setting out the main observations and conclusions and recommendations arising from the review process.

Note:

The Reporter will not be required to carry out any site verification work; this review will be conducted wholly as a desktop exercise.

Timescales and deliverables

The formal deliverables for this project are:

1. Minutes of meetings to be provided with the draft and final reports.
2. Fortnightly brief (1-2 page) reports summarising progress to date, next steps, project risks, and emerging issues;
3. Interim presentation;
4. Draft report; and
5. Final report.

The key milestones for the project are as follows:

- Initiation tripartite meeting – March 2016
- NR meetings –March 2016
- Draft findings shared – March 2016
- Draft report – April 2016
- Tripartite meeting to discuss report – April 2016
- Final report – May 2016

Independent Reporter Proposal

The Reporter shall prepare a proposal for review by the ORR and Network Rail on the basis of this mandate. ORR and Network Rail will review the proposal with reference to the criteria for selection – see attached guidance document.

The final approved proposal will form part of the mandate and shall be attached to this document.

The proposal will detail methodology, tasks, programme, deliverables, resources and costs.

Appendix 1 – Joint ORR and Network Rail Guidance to Reporters

1. The purpose of this document is to describe the trilateral relationship between ORR, Network Rail and each Reporter. It sets out in a practical context what both ORR and Network Rail expect from Reporters, and seeks to encourage best practice. This will help Reporters to deliver work in a way which meets these expectations and requirements. These requirements will be taken into account as part of the Reporter Framework (as provided to Reporters).

2. This guidance is owned and updated as necessary jointly by ORR and Network Rail. In the event of any discrepancy between this document and the Reporter contract, the latter will prevail. This guidance does not provide an exhaustive list of responsibilities and should Reporters wish to discuss these guidelines further they should contact the following for a trilateral discussion:

    - Andy Lewis for ORR; and
    - Jonathan Haskins for Network Rail.

The Trilateral Relationship

3. Licence Condition 13 (LC13) of Network Rail network licence states:

    - "The role of the Reporter is to provide ORR with independent, professional opinions and advice relating to Network Rail's provision or contemplated provision of railway services, with a view to ORR relying on those opinions or advice in the discharge by ORR of its functions under, or in consequence of, the Act. Where appropriate, ORR shall give the licence holder an opportunity to make representations on those opinions or advice before relying on them."

4. Reporters should be familiar with the obligations as set out in LC13 and the terms of the contract.

5. For the avoidance of doubt, in delivering this role, ORR and Network Rail expect that Reporters will also add value to Network Rail in helping it to improve its performance and business as provider of railway services, wherever possible. However, it is recognised that this is not the primary purpose of the Reporter under the Licence and that this may not always be possible to deliver each mandate.

Role and Duties of the Reporters

6. Reporters must provide an independent view and remain impartial throughout the review.

    For example:

    - Information should be shared equally and at the same time with both clients. Any correspondence or clarifications sought by Reporters should also be dealt with in the same way; and
    - Communication between all three parties should be open e.g. both ORR and Network Rail should be invited to or made aware of meetings or discussions even if the meeting is more appropriate with only one client.

Identifying Reporter Work

7. ORR will identify instances where there is a requirement to engage a Reporter. In practical terms, this is likely to arise from on-going discussions with Network Rail and in most cases (except urgent or exceptional cases) the potential for engagement of Reporters will have been identified in advance.

Mandates – Reporter Proposals

8. Clause 4 of the contract sets out the key requirements around provision of services. Requirements for reporter work normally arise from the day to day discussion of issues between ORR and Network Rail.

9. ORR will prepare a draft mandate for each piece of work and will in most cases agree this with Network Rail.

10. Mandates will be presented in a standard format for consistency and will clearly set out:

    - the purpose;
    - the scope;
    - why the review is necessary;
    - what it will achieve;
    - the expected outputs; and
    - timescales for providing reports.

11. Once agreed with Network Rail, ORR will email the mandate to the relevant Reporter(s), asking for comments and a proposal for the work, which should include costs and CVs for the proposed Reporter team. The Reporter has seven working days to respond with a proposal or such other timescale as determined by ORR. Every proposal must include:

    - costs;
    - resources;
    - CVs of the proposed mandate team – when providing proposals, Reporters should make the most efficient use of their resources including the most appropriate make-up of the review team;
    - methodology for delivering the aims of the mandate;
    - timescales;
    - framework of meetings, including a tripartite findings meeting before issue of the draft report;
    - expected deliverables and a concise explanation of how the aims of the mandate will be met; and
    - for larger scale reporter studies, the project management approach and project plans should be made explicit

12. Where there are multiple Reporters on a Lot, the ORR and Network Rail will use the following criteria to determine which Reporter they will select to conduct the work:

Procedure for Call Off under the Framework Agreements

Where more than one Contractor has been selected for any particular lot, ORR and Network Rail will allocate mandates on the basis of the following criteria:

1. The expertise required is only available from one source. This may be due to ownership of exclusive design rights or patents.
2. Where the mandate constitutes follow up work, which is directly related to a recently completed study.
3. The Contractor which demonstrates the greatest expertise in the subject matter of the mandate or the approach required.
4. The Contractor's performance against the performance framework
5. An overall assessment of value for money based on cost and complexity of work.

If the ORR and Network Rail cannot determine the most appropriate Contractor for a mandate using the above criteria, ORR and Network Rail will conduct a mini-tender with the Contractors who have been awarded the relevant lot using the following criteria in order to determine the most economically advantageous proposal:

1. The Contractor demonstrates sufficient knowledge of subject matter and possesses the technical skills, resource and competencies required for the work.
2. Contractor Costs.
3. The Contractor demonstrates innovation and value for money in its proposal.
4. The Contractor's performance against the performance framework.

13. Prior to conducting such a mini-tender, ORR and Network Rail will inform Contractors of the relative weighting of the above criteria and of any additional sub-criteria applicable in the context of a particular mandate.
14. ORR and Network Rail will endeavour to discuss the proposals received and to confirm by e-mail within **five working days** that the proposal is acceptable (or otherwise). There may be circumstances where ORR and Network Rail need longer to respond.
15. ORR will then formally instruct the reporter to start work, and the reporter will arrange a start-up meeting with key representatives from both ORR and Network Rail.

Mandates – During Delivery

16. The following sets out some key points regarding conduct of any inquiry. Reporters must provide an independent view and remain impartial throughout the inquiry. They should expect to discuss their progress and findings

trilaterally with ORR and Network Rail and for some challenge to be given – particularly in relation to the factual accuracy of the findings.

Costs and expenses

17. If additional funds are required to deliver a mandate beyond those agreed at the outset, a timely proposal and justification must be given to ORR and Network Rail (as soon as the issue arises). The Reporter should notify ORR and Network Rail who will discuss and respond in a reasonable timescale. Additional work (and cost) must not proceed without approval.
18. Any reasonably incurred expenses will be reimbursed by Network Rail. Only expenses that have been incurred in accordance with Network Rail's expenses policy will be paid.
19. All invoices should be sent to Matthew Blackwell (Matthew.Blackwell@networkrail.co.uk) at Network Rail prior to being sent to Network Rail Accounts Payable.

Amendment to mandates

20. For practical reasons it may be necessary for a mandate to be revised once work has commenced or awarded. For the avoidance of doubt this will not lead to the ORR and Network Rail seeking to re-run the award of the mandate unless ORR and Network Rail agree that the revision constitutes a material change to the original mandate.

Meetings

21. Unless otherwise directed, all key meetings must be trilateral and both parties should be made aware of any other meetings taking place.
22. The Reporter should take minutes of meetings, which should be provided to all parties within 7 working days.

Issues or concerns

23. Should a situation arise whereby either ORR or Network Rail is dissatisfied with the quality of a piece of work, we will explain clearly our reasons, gain approval from the other client and then, if we deem appropriate, may request the Reporter to re-do that part of work at no additional cost.
24. Should the Reporter encounter any issues with an inquiry (review) the Reporter should notify:
    - Andy Lewis for ORR
    - Jonathan Haskins for Network Rail

Reports

The report document

25. **All** Reports must include an 'Executive Summary' which should be written clearly, concisely and highlight key findings and key recommendations.

26. The full reports should also be written concisely in plain English, and should provide a brief 'Introduction' outlining the aims of the mandate and how these have been met. They should provide further detail on what is mentioned in the Executive Summary and there should not be any material points raised in the main report which have not already been mentioned in the Executive Summary.

27. Where there is commercially sensitive information in the report, the Executive Summary will be published on ORR's website, with any necessary redactions, instead of the full report. Otherwise, usually the full report will be published unless any redactions are appropriate due to a Freedom of Information Act exemption.

Recommendations

28. A recommendation is a specific action that the Reporter considers, following its analysis, should be undertaken by either Network Rail, or any other party. While the majority of recommendations are likely to be for Network Rail, not all need to be.

29. Reporters should make all recommendations SMART (Specific, Measureable, Achievable, Realistic and Time-bound). The Reporter should:

    - provide a clear description of the recommendation and the benefit that implementation will deliver;
    - outline the evidence which is required in order for the recommendation to be closed out; and
    - discuss and agree a target date for completion of the recommendation with ORR and Network Rail.

30. Recommendations should only be included in the report if they actually add value to either ORR or Network Rail or another industry party and the benefits are sufficient to justify implementation. It is acceptable for a report not to include recommendations, as long as key requirements of the mandate have been met (e.g. if an inquiry finds that Network Rail is fully compliant with its requirements). A smaller number of well-targeted and SMART recommendations which will deliver tangible improvements is preferable to a large number of general recommendations.

31. In order to add further value, the report may also include observations on areas for improvement which do not need to be captured in a formal Recommendation if they are not central to delivery of the mandate requirements.

32. Recommendations will be tracked by the Reporter which generated them.

Payment

33. Reporters must include the purchase order number, and unique mandate reference (UMR) number for work when invoicing Network Rail for payment.

34. The clients can query invoices and have the right to check timesheets (and expenses) and investigate work before payment is agreed.

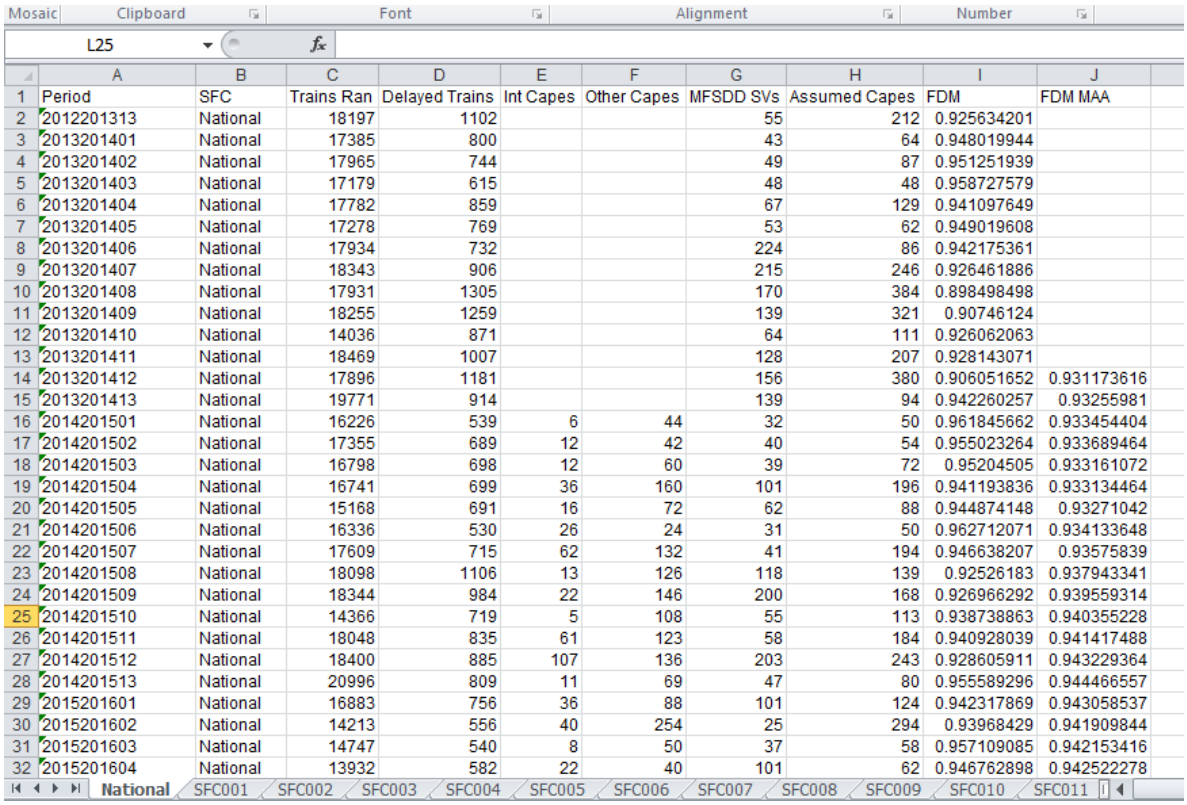
Post-mandate review

35. The clients will provide feedback on the work carried out, having assessed performance using the Performance Framework on a per mandate basis. This

will reflect any issues or concerns raised with the Reporter during delivery of the mandate.

36. The clients will also hold formal feedback sessions with each Reporter every six months to review progress.

Appendix 2: Example of Data Reported to ORR



Mosaic | Clipboard | Font | Alignment | Number

L25

	A	B	C	D	E	F	G	H	I	J
1	Period	SFC	Trains Ran	Delayed Trains	Int Capes	Other Capes	MFSDD SVs	Assumed Capes	FDM	FDM MAA
2	2012201313	National	18197	1102			55	212	0.925634201	
3	2013201401	National	17385	800			43	64	0.948019944	
4	2013201402	National	17965	744			49	87	0.951251939	
5	2013201403	National	17179	615			48	48	0.958727579	
6	2013201404	National	17782	859			67	129	0.941097649	
7	2013201405	National	17278	769			53	62	0.949019608	
8	2013201406	National	17934	732			224	86	0.942175361	
9	2013201407	National	18343	906			215	246	0.926461886	
10	2013201408	National	17931	1305			170	384	0.898498498	
11	2013201409	National	18255	1259			139	321	0.90746124	
12	2013201410	National	14036	871			64	111	0.926062063	
13	2013201411	National	18469	1007			128	207	0.928143071	
14	2013201412	National	17896	1181			156	380	0.906051652	0.931173616
15	2013201413	National	19771	914			139	94	0.942260257	0.93255981
16	2014201501	National	16226	539	6	44	32	50	0.961845662	0.933454404
17	2014201502	National	17355	689	12	42	40	54	0.955023264	0.933689464
18	2014201503	National	16798	698	12	60	39	72	0.95204505	0.933161072
19	2014201504	National	16741	699	36	160	101	196	0.941193836	0.933134464
20	2014201505	National	15168	691	16	72	62	88	0.944874148	0.93271042
21	2014201506	National	16336	530	26	24	31	50	0.962712071	0.934133648
22	2014201507	National	17609	715	62	132	41	194	0.946638207	0.93575839
23	2014201508	National	18098	1106	13	126	118	139	0.92526183	0.937943341
24	2014201509	National	18344	984	22	146	200	168	0.926966292	0.939559314
25	2014201510	National	14366	719	5	108	55	113	0.938738863	0.940355228
26	2014201511	National	18048	835	61	123	58	184	0.940928039	0.941417488
27	2014201512	National	18400	885	107	136	203	243	0.928605911	0.943229364
28	2014201513	National	20996	809	11	69	47	80	0.955589296	0.944466557
29	2015201601	National	16883	756	36	88	101	124	0.942317869	0.943058537
30	2015201602	National	14213	556	40	254	25	294	0.93968429	0.941909844
31	2015201603	National	14747	540	8	50	37	58	0.957109085	0.942153416
32	2015201604	National	13932	582	22	40	101	62	0.946762898	0.942522278

National | SFC001 | SFC002 | SFC003 | SFC004 | SFC005 | SFC006 | SFC007 | SFC008 | SFC009 | SFC010 | SFC011

Appendix 3: Confidence Grading System

System Reliability Grading System

System reliability band	Description
A	Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment.
B	As 'A' but with minor shortcomings. Examples include old assessment, some missing documentation, some reliance on unconfirmed reports, some use of extrapolation.
C	Extrapolation from limited sample for which Grade 'A' or 'B' data is available.
D	Unconfirmed verbal reports, cursory inspections or analysis.

Notes:

1. System reliability is a measure of the overall reliability, quality, robustness and integrity of the system that produces the data.

2. Some examples of the potential shortcomings include old assessment, missing documentation, insufficient internal verification and undocumented reliance on third-party data.

Accuracy Grading System

Accuracy Band	Description
1*	Data used to calculate the measure is accurate to within 0.1%
1	Data used to calculate the measure is accurate to within 1%
2	Data used to calculate the measure is accurate to within 5%
3	Data used to calculate the measure is accurate to within 10%
4	Data used to calculate the measure is accurate to within 25%
5	Data used to calculate the measure is accurate to within 50%
6	Data used to calculate the measure is inaccurate by more than 50%
X	Data accuracy cannot be measured

Notes:

1. Accuracy is a measure of the closeness of the data used in the system to the true values.

2. Accuracy is defined at the 95% confidence level - i.e. the true value of 95% of the data points will be in the accuracy bands defined above.

Appendix B

Sampling Technical Note

Review of Freight Delivery Metric
Technical Note on Data Sampling

Author: **Pete Laud**
Date: **20th July 2016**

Following a detailed discussion with Scott Provan, the following points are noted regarding the requirements for the assessment of accuracy for FDM.

As agreed at the inception meeting, the following aspects of the process are out of scope for this review:

- The validation of the on-site accuracy of the recording of the train arrival times; and
- The process to attribute the cause of the delay.

Therefore there is no requirement for the review to consider the accuracy of the arrival time data at the individual train level because the record of lateness is the first of two steps to determine a "FDM failure". The second step is matching any qualifying delay to each late train. Furthermore, this two-step process for matching lateness and delay to create a flag for "FDM failure" is based on an SQL query, which NR can provide for inspection, after which the derivation of that flag need not be inspected at the individual train level.

Consequently, the "sampling units" for the review exercise are the reporting periods, not individual trains. The "source data" for the review consists simply of a list for each period, of trains for which the flag for FDM failure has been triggered, and similar lists of trains for the other components of the FDM metric.

As stated in the definition paper circulated on 24th July 2012, the FDM is defined mathematically as:

$$\frac{\sum NR\ delayed + \sum NR\ assumed\ cancelled + \sum NR\ service\ variations}{\sum trains\ run + \sum NR\ assumed\ cancelled}$$

The FDM spreadsheet contains aggregate counts for each element of this formula, and Scott Provan can provide source data spreadsheets listing the trains that each of those counts represent. (It should be noted that in the listing of trains "assumed cancelled", trains that are cancelled in both directions of their scheduled journey will only be listed once, but need to be counted as 2 trains.)

The Inception Meeting minutes also noted that the regulatory measure for FDM is at the national level only, therefore there is no requirement to validate the calculations at the Strategic Freight Corridor level.

Given the above comments on "out of scope" items, the review of accuracy is therefore a simple task of confirming, for each period, that the aggregate totals for each element of FDM are correct according to the source data train listings. The calculation of the FDM itself, and the MAA, can then be validated using Excel formulae.

Any discrepancy would be quantified in terms of the calculated FDM figure minus the reported FDM, in percentage points.

The review is to be based on data from April 2015 to March 2016, representing a "sampling population" of only 13 periods of totals to be checked. Given the small sampling population, and the simplicity of the task required for checking each period, it is proposed that there is no need to sample a subset of the periods for checking, but all 13 periods will be reviewed, therefore no statistical sampling methodology is needed.

The overall accuracy will be quantified using the discrepancy in the MAA for period 13 of the 2015/16 year, and the magnitude of any such discrepancy will be compared against the accuracy bands defined in the Mandate Appendix 3 (i.e. within 0.1%, within 1%, etc).

Appendix C

Definition Correspondence

Lindsay Durham, Freightliner
Letter also being sent to:
Philip Hassall and Nigel Jones, DBS
David Knowles, GBRf
Neil McNicolas, DRS
Stephen Haynes & Simon Ball, Colas Rail
cc Michael Lee, ORR

Kings Place
90 York Way
London
N1 9AG

T +44 (0) 203 356 9170
E robin.gisby@networkrail.co.uk

28 September 2011

Dear Lindsay

Introducing a new Freight performance metric

As you are aware, over the past five months there has been a series of discussions both via the RFOA and directly with Freightliner regarding the appropriateness of the current measure for assessing freight performance – freight delay per 100 train kms. The result of these discussions has led the industry to conclude back in May that there would indeed be value in reviewing the existing measure of performance. However, as part of that ongoing review, reaching both an industry consensus as to whether the existing regulatory measure of performance should be replaced and if so what a more appropriate measure of performance might be has not been easy, indeed we understand the collective Freight Operator view is that the existing regulatory metric remains unchanged. Putting it very frankly, there has been industry scepticism that Network Rail is only seeking to change the measure to avoid enforcement action. Whilst this is not the case, I would concede that we have still not done enough to demonstrate to you that our objectives are aligned with yours in terms of our absolute focus on performance, not least because Network Rail has failed to achieve the current regulatory target in each of the last two years.

The reasons for the variances in performance against the existing metric have been explored over the last two years with both ORR and our customers, please refer to the slide deck which outlined these reasons, (distributed to you by Stephen Draper on the 13 September for discussion at the RFOA meeting). We would however like to take this opportunity to reiterate we remain absolutely committed to resolving these issues which undoubtedly might be expected to have a significant impact on any measure of performance and we recognise to do this we need to work more closely with you sharing the detail behind these issues and working through plans to improve them together. We look forward to doing this in more detail with you at the appropriate meetings.

I am also pleased to be able to report that we have seen a significant improvement in performance over the last three periods. This is encouraging but there is still much to do if we are to achieve the consistent good performance which our customers expect.

Network Rail Infrastructure Limited Registered Office: Kings Place, 90 York Way, London N1 9AG Registered in England and Wales No. 2904587 www.networkrail.co.uk

Not withstanding the recent performance improvements Network Rail remains of the view that the current regulatory measure of performance is not fit for purpose. We firmly believe that a performance measure must drive delivery for what our customers tell us is important to them. This was highlighted in the letter from the RFOA to the ORR dated 29 June 2011 which stated *'our greatest focus in terms of performance is always on the needs of our customers and the service they require'*. The existing measure in our opinion does not achieve this. Our joint development of the Freight Delivery Measure (FDM), discussed in more detail below, sought to achieve this and to demonstrate alignment of objectives. However, as highlighted above we recognise that our freight customers are of the opinion that this should be an additional metric and that it had not been developed in their view as a replacement but more of an enhancement to the existing regulatory metric. We recognise and understand the views held by our customers and we know that we need to demonstrate our commitment by engaging more robustly with you on performance issues going forward, using the discussions and the output of both metrics to focus on what's important to you and your customers.

Our intention therefore is to run this metric in parallel to the existing regulatory metric (albeit not as an additional regulatory metric to start with) which takes into account your requirements and will allow us to monitor performance against this metric, and to discuss the output early in the New Year.

In recognition of your concerns around engagement and to address the concerns you have around *'how devolution will work for you'* , we are pleased to announce we are also in the process of transferring accountability for freight performance delivery to the Central Network Operations leadership team to drive forward a new way of working. This decision does not in any way conflict with the impending arrival of our Freight Director who arrives in November and the devolution of all routes by March 2012, but seeks to recognise the urgency of the situation and seeks to provide the necessary focus and expertise now needed. I will share the details of these plans with you shortly.

Separately, and as stated in Neil Henry's letter to you of 27 May 2011, a lot of our focus over the past few months has been on establishing freight performance improvement plans at Route level, as a means of holding Network Rail to account. Considerable discussion has also taken place between Network Rail and the freight operators (primarily through the RFOA) as regards how we can work together to jointly improve customer satisfaction and operational performance. As you are aware this work has focussed on:

- individual operator action plans; and
- freight performance metrics.

As part of this work there have been detailed discussions taking place with each freight operator with regards to setting up and agreeing an individual action plans for the remainder of 2011/12 and to decide on the process for future years. As we have previously said, these plans will contain both Network Rail and freight operator initiatives for performance improvement and should help to continue to reduce FOC on TOC delay as well as Network Rail delay on freight operators. Due to the commercial and non regulated nature of the rail

freight business, it is proposed that the details within these plans will remain confidential between Network Rail and each freight operator.

Please see the details below which explain the work that has taken place relating to the proposed non-regulatory measure of performance – FDM.

Proposed Metric *(n.b as a result of customer feedback the metric now reflects T30 vice T60)*

The metric would capture the proportion of planned freight trains that are significantly delayed (30 minutes or more) or cancelled by Network Rail, thus potentially damaging the reputation of the freight business. This most closely resembles the CaSL metric for passenger services but as there are significant differences it was felt important that the name given to the measure is also different. The metric, the details of which have been worked through by Freightliner, DB Schenker and Network Rail, is planned to be one that:

- is easy to understand;
- is meaningful to the freight business;
- introduces no obvious perverse incentives to either organisation;
- does not materially raise the cost of data capture;
- is accurate enough to be useful and reflects satisfaction with Network Rail; and
- is simple and unambiguous to calculate.

The appendix contains a full definition paper which has been shared across all the freight operators. We have linked the metric to the Schedule 8 process that operates successfully between Network Rail and our freight customers. This means, like Schedule 8, the metric is mainly passive and calculated after the period end.

Reasoning behind the metric

FDM is designed to indicate the number of instances where the successful meeting of customer expectations has not been possible due to factors outside of the freight operator's own control.

To be counted as a failure to achieve FDM, the train either has to arrive at its destination 30 or more minutes late – a threshold suggested by the RFOA as being most representative of significant lateness; or the train has to be cancelled (i.e. the desired journey was not possible to make). Unplanned cancellations have a major impact on freight business and therefore the inclusion of cancellations in this metric is a big step forward from the current regulatory delay minute based metric.

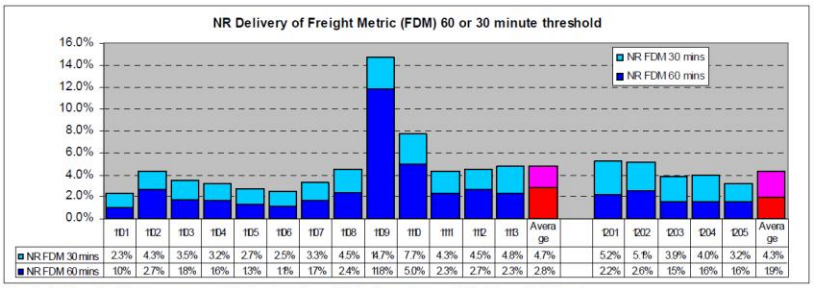
To be counted as failed FDM the train also has to have been cancelled due to a non freight operator cause or suffered 30 or more minutes of delay due to non-freight operator incidents. This is to try and only include trains where the delay was chiefly caused by Network Rail or a passenger train operator. TOC on FOC delays are included as Network Rail has responsibility for management of the network.

Both delay and lateness thresholds are required due to the large amount of recovery time that can be present within a freight schedule which could mean a train that has received over an hour of delay from a Network Rail incident still arrives at the customer destination on time.

It should be stressed that the metric will be seen as measuring only one part of customer satisfaction alongside things such as journey time and network availability. Additionally, the metric will not replace delay minutes as the preferred measure of operational issues.

Historic Performance

We have used PSS/Business Objects and the Schedule 8 records to calculate FDM for each period since the start of 2010/11[1]. This analysis is set out below:



	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	Average		1201	1202	1203	1204	1205	Average
NR FDM 30 mins	2.3%	4.3%	3.5%	3.2%	2.7%	2.5%	3.3%	4.5%	14.7%	7.7%	4.3%	4.5%	4.8%	4.7%		5.2%	5.1%	3.9%	4.0%	3.2%	4.3%
NR FDM 60 mins	1.0%	2.7%	1.8%	1.6%	1.3%	1.1%	1.7%	2.4%	11.8%	5.0%	2.3%	2.7%	2.3%	2.8%		2.2%	2.6%	1.5%	1.6%	1.6%	1.9%

60 minute threshold shown as a guide to show the relative importance of the threshold level

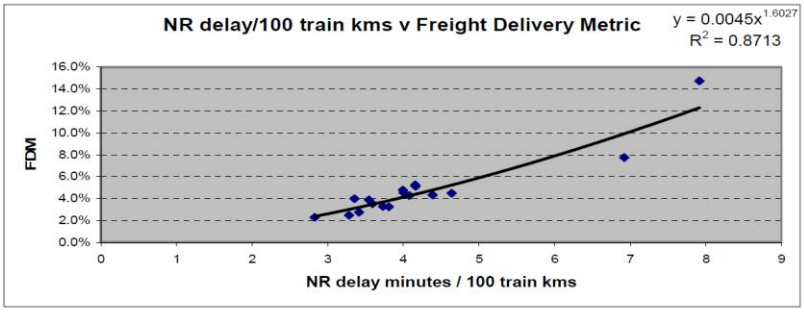
As expected the metric highlights the impact of the winter weather on freight delivery, and going forward this will be a concern when setting a meaningful annual target. Outside of the winter period the measure shows that Network Rail failed to deliver between 2.5 per cent and 5 per cent of freight train services using the 30 minute threshold, with the period average being just above 4 per cent.

Operational Performance

It is recognised that introducing a customer satisfaction style metric with a threshold of 30 minutes could, if used incorrectly, send the wrong message. It is therefore important that Network Rail continues to target improvement in delay minutes and cancellations. It is proposed that route freight delay minute targets will still be set and monitored. Real time screens will still show FPM (a time to 10 minutes measure). Freight Performance Plans will include both the impact on delay and the impact on cancellations.

The graph below demonstrates that the proposed metric FDM does track changes in the current operational measure (delay minutes). This is important as day to day improvements in delay should continue to result in a better delivery of FDM.

[1] Not possible to accurately calculate NR FDM before this period due to the way service variation was captured.



Next steps

The key next step is to set and agree a trajectory (target) for the new metric for the remainder of CP4. This target will have to allow for natural variation in freight performance due to seasonal weather.

After the target has been set there are still various steps and questions which will need to be addressed, including:

- The calculation process.
- The reporting method – updating annual return, ORR data warehouse etc.
- Whether the new metric should be contained within LOCs.
- How to communicate the existence of the new metric within Network Rail and across the industry
- Does PPT (the overall Network Rail performance metric) need to change as it is currently based on FPM?

In order to minimise the risk of changing metrics at short notice and to allow all parties to gain confidence in the new measure we are proposing that this year (2011/12) the metric is run in shadow mode and reported alongside delay minutes per 100 train-kms. The industry proposes that a decision is taken towards the end of this performance year as regards whether the new metric is proving to deliver the anticipated benefits and whether to submit a change control request to switch or add this as a regulatory target for the remainder of CP4 or for the start of CP5.

Target setting

The principles of the targets have been agreed as:

- Being based on performance during 2010/11.
- Including continuous improvement.
- Splitting winter and non winter performance.

Splitting out the winter periods will be helpful in monitoring the successful or otherwise delivery of the metric without having to account for the influence of extended severe weather. A target will still be set for the winter months but success against this measure will be reviewed with consideration of the conditions, as during severe weather the industry collectively believes that industry focus should be on keeping key commodity traffic moving no matter the consequence on overall resultant lateness.

FDM for 2010/11 outside the three winter periods (period 9 10 and 11) was 3.74%.

Allowing for continuous improvement of 2.5% Network Rail is proposing the following targets:

2011/12	**3.65%**
2012/13	**3.56%**
2013/14	**3.47%**

Network Rail is also proposing that the targets show a slightly lower level of continuous improvement through CP5; a 1.5% year on year improvement would result in the following targets:

2014/15	**3.41%**
2015/16	**3.36%**
2016/17	**3.31%**
2017/18	**3.26%**
2018/19	**3.20%**

This would result in a 15% improvement in the delivery of freight services by the end of CP5. Targets for 2012/13 onwards should be reviewed towards the end of this year to check that all industry parties believe the targets are challenging enough and will result in the performance improvement required to continue to grow the rail freight business.

During the winter periods we are proposing a best endeavour target of 5% for this year and the remainder of CP4 and then review the target for CP5 based on performance during the next two winters.

We believe that we should review progress again early in the new calendar year, and we would propose that ORR takes no further action until then.

Yours sincerely,

Robin Gisby
Managing Director, Network Operations

Appendix

DEFINTION PAPER – Freight Delivery Metric (FDM)

Purpose:

- To devise a regulatory metric that better reflects Network Rail's impact on freight customer satisfaction
- To continue to drive performance improvement for FOC services.

Key success criteria:

- Easy to understand.
- Meaningful to the Freight Business.
- Consistent across all Freight Operators.
- Doesn't noticeably increase the workload of either the Freight Operators or Network Rail staff.
- Is accurate enough to be useful and reflect satisfaction with Network Rail.
- Doesn't introduce perverse incentives within either organisation.

Proposers:

- John Thomlinson, Stephen Draper, Alun Fowles, Karen Breakspear – Network Rail.
- Tom Jones – Freightliner
- John Holmes – DB Schenker

Following guidance given by the RFOA in a letter to ORR dated 29 June 2011

Metric in words:

The metric is the percentage of trains which Network Rail has failed to deliver successfully.

Failed to deliver - The percentage of freight commercial services that do not reach their destination within 30 minutes of their booked arrival time; and which have either been cancelled, or delayed 30 or more minutes, by Network Rail or a non FOC commercial operator.

Metric Equation:

$$\frac{\text{Number of freight trains NR failed to deliver to satisfaction}}{\text{Number of trains NR could have delivered to satisfaction}}$$

8

In maths:

$$\frac{\sum \text{NR delayed trains} + \sum \text{NR assumed cancelled trains} + \sum \text{NR caused service variations}}{\sum \text{trains run} + \sum \text{NR assumed cancelled trains}}$$

Definitions:

Trains: Unless otherwise stated a train is any Freight Commercial service which is not class 0 (light loco moves). This includes VSTP and unloaded services. Freight Commercial services to be defined by their service code, through exclusion.

Network Rail Delayed train: A train that departs its planned origin and arrives at its planned destination but arrives at its planned destination 30 or more minutes late and has 30 or more minutes of delay attributed in total to Network Rail plus TOC plus Non Commercial FOC responsible managers (i.e. excluding all FOC commercial causes, not just FOC on Self, and planned delays).

Network Rail assumed cancellation: The number of non FOC commercial caused cancellations as captured in the freight Schedule 8 performance regime but adjusted to capture the fact that cancelled unloaded trains are not included in Schedule 8. To keep things simple all intermodal cancellations will count as 1 failure, all non intermodal cancellations will count as 2 failures (which essentially says the following empty train move would have also been cancelled).

Network Rail caused service variation: The number of trains which were subject to a service variation with non Freight Commercial caused service variation minutes in the Schedule 8 performance regime.

Trains Run: The number of trains which departed their planned origin and arrived at their planned destination (no matter what route was taken) and no matter how late.

Granularity and Reporting:

An MAA figure (with supporting period numbers) will be produced for the entire freight business each period. The official figure will be produced on the Wednesday of week 2 to allow for day 8 dispute resolutions to be included. Freight operator by freight operator figures will not be published but may be calculated for the purpose of Freight Performance Improvement Plans.

The figure will be expressed as a percentage of trains and will be quoted to an accuracy of one decimal place.

Handling disputed minutes and cancellations:

Network Rail delayed trains will be calculated using PSS/BO based on the delay attribution within the system at that time. The potential impact of disputes can be monitored.

Network Rail assumed cancellations will be provided by the Schedule 8 team and therefore will reflect Schedule 8 settlements agreed at that time.

Trajectory:

Network Rail will calculate the historic FDM percentages by period from Period 1 2010/11 to Period 5 2011/12. These will be broken down where possible into the constituent parts. A trajectory for the remainder of CP4 will then be discussed and agreed between Network Rail and the freight operators and then presented to ORR for approval.

Comments:

Both Network Rail and the freight operators believe that this metric can be produced at the end of each period without much additional effort.

Cancellation data cannot be taken directly from PSS/BO hence the link to the validation process which already exists within the Schedule 8 performance regime.

Freight operator caused cancellations do not need to be captured as we are measuring against trains that Network Rail could have delivered on time.

Light Loco trains (class 0) are excluded as they are in the current regulatory measure.

Delay Minutes and Cancellations would still be core KPI and management measures – FOCs still desire a right time arrival and successful operation of the network requires trains to be right time throughout their journey.

This metric is a passive measure calculated post event to demonstrate how successful Network Rail has been in delivering customer needs. It will not be an operational metric.

It is recognised that this metric could not be produced real time or on a daily basis (due to the cancellation figure relying on a Schedule 8 process outside of BO/PSS). Network Rail will consider how to develop a proxy metric from BO/PSS to allow management to track progress on delivery during the period – this is not seen as a core requirement.

Issues and concerns test:

Network Rail has carried out an internal review with key practitioners and data quality experts to test that the new metric is fit for purpose, introduces no perverse incentives and can be accurately calculated. This review raised a few issues surrounding data quality but nothing which suggests that the metric should not be introduced. These issues are listed below in order to assist your assessment of the metric and to provide reassurance that these issues have been considered:

- Variability due to factors outside direct Network Rail control (e.g. weather);
- Reliance on the Schedule 8 and dispute processes;
- Quality of lateness data off the Network Rail network is out of Network Rail control;
- Concern about quality of bid VSTP paths as these services are included for the first time in a regulatory metric;
- A need to improve attribution on freight delay and cancellations – will any changes to the Delay Attribution Guide be required;
- Network Rail taking responsibility for delays from non commercial freight services and TOC on FOC within the measure; and
- An inability to calculate it on a daily basis may hinder management information.

Ms Lindsay Durham (Chair)
Rail Freight Operators' Association
c/o Freightliner Group Limited
3rd Floor, The Podium
1 Eversholt Street
London
NW1 2FL

Kings Place
90 York Way
London
N1 9AG
T 07515 530978
Ref: RFOA/TR/12/01

24th July 2012

Dear Lindsay,

CP5 Freight Performance Measure

I write following a series of discussions between Network Rail and your members regarding the possible introduction of a new regulatory freight performance measure for CP5. At our last informal meeting in June we agreed that it would be acceptable for the RFOA to act as the FOC's representative in this regard.

During 2011 Network Rail and its freight customers developed the concept of the Freight Delivery Measure (FDM). This measure would seek to capture delay, service variation and cancellation but in a manner that would drive Network Rail to deliver against a lateness target.

Since the concept was developed we have been debating the basis upon which the measure could be introduced. To date Network Rail has been monitoring FDM to a lateness threshold of 30 minutes. In recent discussions you requested that we consider a lateness threshold of 15 minutes.

Having taken some time to analyse the data, to understand the relationships between delay, cancellation and lateness and also having debated the likely behaviours that this measure may drive, Network Rail is content to introduce FDM at a 15 minute delay threshold against an annual target of 90% (i.e. 90% of all trains arriving at destination within 15 minutes of booked time). See attached **APPENDIX 1.1 - DEFINTION PAPER – Freight Delivery Metric (FDM)**
that has been revised to explain FDM at 15 minutes.

The FDM measure provides the freight community with additional regulatory oversight to that which exists today. FDM targets Network Rail to deliver improvements in lateness and cancellations as well as delay. It provides a more tangible measure for your customers that should resonate with them and the needs

of their supply chain and it provides freight with a target that is well in excess of punctuality targets either promised or achieved by your modal competitors.
I am therefore seeking your agreement for a joint submission to the ORR proposing a CP5 freight performance target of FDM @ 90%.

We touched on this as part of the agenda at the last Freight Recovery Board on Thursday 19th July 2012 but I would welcome your thoughts in the mean time. I have copied the letter to Nigel Jones, Ian Kapur, John McGuiness and Simon Ball.

Yours sincerely,

Tim Robinson - Director, Freight

Cc Simon Ball, Colas Rail
Nigel Jones, DBSR
John McGuiness, DRS
Ian Kapur, GBRf

APPENDIX 1.1 - DEFINTION PAPER – Freight Delivery Metric (FDM)

Purpose:

- To devise a regulatory metric that better reflects Network Rail's impact on freight customer satisfaction
- To continue to drive performance improvement for FOC services.

Key success criteria:

- Easy to understand.
- Meaningful to the Freight Business.
- Consistent across all Freight Operators.
- Doesn't noticeably increase the workload of either the Freight Operators or Network Rail staff.
- Is accurate enough to be useful and reflect satisfaction with Network Rail.
- Doesn't introduce perverse incentives within either organisation.

Proposers:

- John Thomlinson, Stephen Draper, Alun Fowles, Karen Breakspear – Network Rail.
- Tom Jones – Freightliner
- John Holmes – DB Schenker

Following guidance given by the RFOA in a letter to ORR dated 29 June 2011

Metric in words:

The metric is the percentage of trains which Network Rail has delivered successfully.

Failed to deliver - The percentage of freight commercial services that do not reach their destination within 15 minutes of their booked arrival time; and which have either been cancelled, or delayed 15 or more minutes, by Network Rail or a non FOC commercial operator.

Metric Equation:

$$100\% - \frac{\text{Number of freight trains NR failed to deliver to satisfaction}}{\text{Number of trains NR could have delivered to satisfaction}}$$

In maths:

$$100\% - \frac{\sum\text{NR delayed trains} + \sum\text{NR assumed cancelled trains} + \sum\text{NR caused service variations}}{\sum\text{trains run} + \sum\text{NR assumed cancelled trains}}$$

Definitions:

Trains: Unless otherwise stated a train is any Freight Commercial service which is not class 0 (light loco moves). This includes VSTP and unloaded services. Freight Commercial services to be defined by their service code, through exclusion.

Network Rail Delayed train: A train that departs its planned origin and arrives at its planned destination but arrives at its planned destination 15 or more minutes late and has 15 or more minutes of delay attributed in total to Network Rail plus TOC plus Non Commercial FOC responsible managers (i.e. excluding all FOC commercial causes, not just FOC on Self, and planned delays).

Network Rail assumed cancellation: The number of non FOC commercial caused cancellations as captured in the freight Schedule 8 performance regime but adjusted to capture the fact that cancelled unloaded trains are not included in Schedule 8. To keep things simple all intermodal cancellations will count as 1 failure, all non intermodal cancellations will count as 2 failures (which essentially says the following empty train move would have also been cancelled).

Network Rail caused service variation: The number of trains which were subject to a service variation with non Freight Commercial caused service variation minutes in the Schedule 8 performance regime.

Trains Run: The number of trains which departed their planned origin and arrived at their planned destination (no matter what route was taken) and no matter how late.

Granularity and Reporting:

An MAA figure (with supporting period numbers) will be produced for the entire freight business each period. The official figure will be produced on the Wednesday of week 2 to allow for day 8 dispute resolutions to be included. Freight operator by freight operator figures will be calculated for the purpose of Freight Performance Improvement Plans.

The figure will be expressed as a percentage of trains and will be quoted to an accuracy of one decimal place.

Handling disputed minutes and cancellations:

Network Rail delayed trains will be calculated using PSS/BO based on the delay attribution within the system at that time. The potential impact of disputes can be monitored.

Network Rail assumed cancellations will be provided by the Schedule 8 team and therefore will reflect Schedule 8 settlements agreed at that time.

Comments:

Both Network Rail and the freight operators believe that this metric can be produced at the end of each period without much additional effort.

Cancellation data cannot be taken directly from PSS/BO hence the link to the validation process which already exists within the Schedule 8 performance regime.

Freight operator caused cancellations do not need to be captured as we are measuring against trains that Network Rail could have delivered on time.

Light Loco trains (class 0) are excluded as they are in the current regulatory measure.

Delay Minutes and Cancellations would still be core KPI and management measures – FOCs still desire a right time arrival and successful operation of the network requires trains to be right time throughout their journey.

This metric is a passive measure calculated post event to demonstrate how successful Network Rail has been in delivering customer needs. It will not be an operational metric.

It is recognised that this metric could not be produced real time or on a daily basis (due to the cancellation figure relying on a Schedule 8 process outside of BO/PSS). Network Rail will consider how to develop a proxy metric from BO/PSS to allow management to track progress on delivery during the period – this is not seen as a core requirement.

Issues and concerns test:

Network Rail has carried out an internal review with key practitioners and data quality experts to test that the new metric is fit for purpose, introduces no perverse incentives and can be accurately calculated. This review raised a few issues surrounding data quality but nothing which suggests that the metric should not be introduced. These issues are listed below in order to assist your assessment of the metric and to provide reassurance that these issues have been considered:

- Variability due to factors outside direct Network Rail control (e.g. weather);
- Reliance on the Schedule 8 and dispute processes;
- Quality of lateness data off the Network Rail network is out of Network Rail control;
- Concern about quality of bid VSTP paths as these services are included for the first time in a regulatory metric;
- A need to improve attribution on freight delay and cancellations – will any changes to the Delay Attribution Guide be required;
- Network Rail taking responsibility for delays from non commercial freight services and TOC on FOC within the measure; and
- An inability to calculate it on a daily basis may hinder management information.

Appendix D

East Anglia Route MFSDD Protocol

1 PURPOSE

The purpose of this instruction is to provide a process for managing freight services during a Disruptive Event, or as a consequence of a Disruptive Event. By implementing this procedure the opportunity arises for freight services which have yet to commence their journey, but which will be affected by a Disruptive Event, to be provided with an Alternative Train Slot (subject to agreement). If this procedure is not implemented then the service management options available are more limited and therefore provide less effective service recovery from large incidents.

This process is designed to deliver greater consistency in the management of freight services affected by Disruptive Events as well as improving the quality of the action taken and improving service recovery.

This instruction is consistent with the Rights and Obligations of all parties who hold, or are subject to, a Track Access Contract (Freight Services).

This instruction replaces National Control Instruction 9.1 issued on the 05 September 2010 and will become effective from 02 June 2012.

2 SCOPE

This process can apply to all Disruptive Events (as defined in Part H of the Network Code) regardless of cause. It is not a mandatory instruction instead it should be used only where Network Rail considers that the protocol will facilitate effective service recovery or where capacity is significantly degraded as a result of the Disruptive Event.

3 REFERENCE DOCUMENTATION

National Control Instructions	9.1

4 RESPONSIBILITIES

Current Operations Manager	Shall: • Control this document • Make sure it is briefed to relevant parties • Maintain regular reviews of the document
Route Control Managers	Shall: • Follow the instructions in this document • Ensure that wider control teams are briefed on the principals set out in this document • Make sure it is followed when responsibilities are delegated to other staff within the control

Shift Signalling Managers	Shall: • Follow the instructions in this document • Ensure that wider control teams are briefed on the principals set out in this document • Make sure it is followed when responsibilities are delegated to other staff within the control

5 PROCESS

5.1 This instruction should be read in conjunction with the flowchart shown in Appendix A – Management of Freight Services During Disruption (NCI 0.1) – Joint Working Instructions.

6 IMPLEMENTATION OF THE PROCESS

6.1 This process is reliant on the consistent and compliant application of the Control Arrangements set out in the Railway Operational Code; in particular maintaining regular dialogue with all customers during the Disruptive Event. A failure to adhere to the Control Arrangements will result in this process not being applicable. If following a Disruptive Event it is determined that this process will be implemented, the Network Rail Control (TRC) will issue an alert to all affected FOCs through the Tyrell system using the standard MFSDD message template. The purpose of this message is to declare a Disruptive Event in accordance with ROC Procedure 9. A copy of the message template can be found in Appendix B.

6.2 The TRC will identify all freight trains affected, or likely to be affected by the Disruptive Event and determine what action needs to be taken with each train.

6.3 The TRC will then contact each affected FOC by telephone and agree the actions to be taken in respect of each of the FOC's affected trains. There are five actions that can be taken in respect of a train:

a) Run the train earlier than booked (subject to MERT – NCI 4.2.3).

b) Run the train later than booked (subject to expected right time arrival at destination).

c) Divert the train onto an alternative route.

d) Cancel the train at origin.

e) Provide the train with an Alternative Train Slot (ATS) when capacity is available either on the booked route or a diversionary route.

6.4 An ATS should only be provided for a train which at the time of the Disruptive Event had not left its booked origin. This includes the return workings (whether resourced from traincrew and / or loco / wagons affected by the Disruptive Event) of trains which were on the network at the time of the Disruptive Event and were delayed by it sufficiently that the return working will be late returning to the network.

6.5 Once actions are agreed for each train the TRC will action each as appropriate and advise affected signal boxes and control offices as necessary.

7 ALTERNATIVE TRAIN SLOTS (ATS)

7.1 Network Rail cannot impose an ATS on any freight train which has left its origin prior to the Disruptive Event occurring and becomes delayed by it*. However, if an ATS can be agreed with the FOC for such a train so that its revised arrival time or passing times on a diversionary route can be more accurately stated, then an ATS can be provided from an appropriate location (i.e. network yard or intermediate point where a consist can be transferred in TOPS).

* Cancellation after 12 hours – if a train is delayed on the network by the Disruptive Event by more than 12 hours then the train becomes a cancellation. At this point the train schedule can be cancelled in Trust and a fresh schedule input for when the train can be accommodated on the network. In these circumstances there should be dialogue with the affected FOC so that any issues with consists can be appropriately managed.

Specific Requirements for the Development of an Alternative Train Slot

If it is agreed that an ATS will be provided for a train then the ATS must be developed in accordance with the following requirements:

a) The ATS must have been discussed with the relevant FOC to establish key service characteristics and requirements i.e. agreement must have been reached over details such as crew relief tonnage / length limits / gauge clearance / route clearance on diversion routes so that the ATS works as a schedule.

b) The ATS must be developed having regard for available capacity on and off the Network for the full distance of the affected service. i.e. if a train is going to Felixstowe and is provided with an ATS the ATS must, as far as reasonably practical, work on the single line and arrive in an available slot at the port.

c) In developing the ATS the controller must develop the schedule in such a way as to minimise the overall lateness of the Base Train Slot (BTS) at destination i.e. the ATS must aim to deliver the train to destination as close to its original planned time as possible.

d) The ATS should be developed in such a way as to avoid unnecessary pathing stops or operational activities that are included in the BTS but not required in the ATS.

e) In circumstances where an ATS is agreed between Network Rail and the FOC there will be no requirement for the FOC to submit a VSTP request for that ATS.

f) In the event that no ATS can be identified for a train that is scheduled to commence its journey after the Disruptive Event occurred, or no agreement can be reached on the proposed ATS, then the train will be cancelled. In this case the onus will be on the FOC to reinstate the train through the submission of a VSTP request when capacity becomes available.

7.2 Notification of an Alternative Train Slots

In the event that an ATS is nominated and accepted by the FOC, then the Relevant Network Rail Control will advise all Affected Network Rail Controls and controlling signal boxes of the ATS's that have been agreed. A template is included at Appendix C which can be used for sending this information via the Tyrell system, although advice to signal boxes at origin and destination locations should be undertaken by telephone.

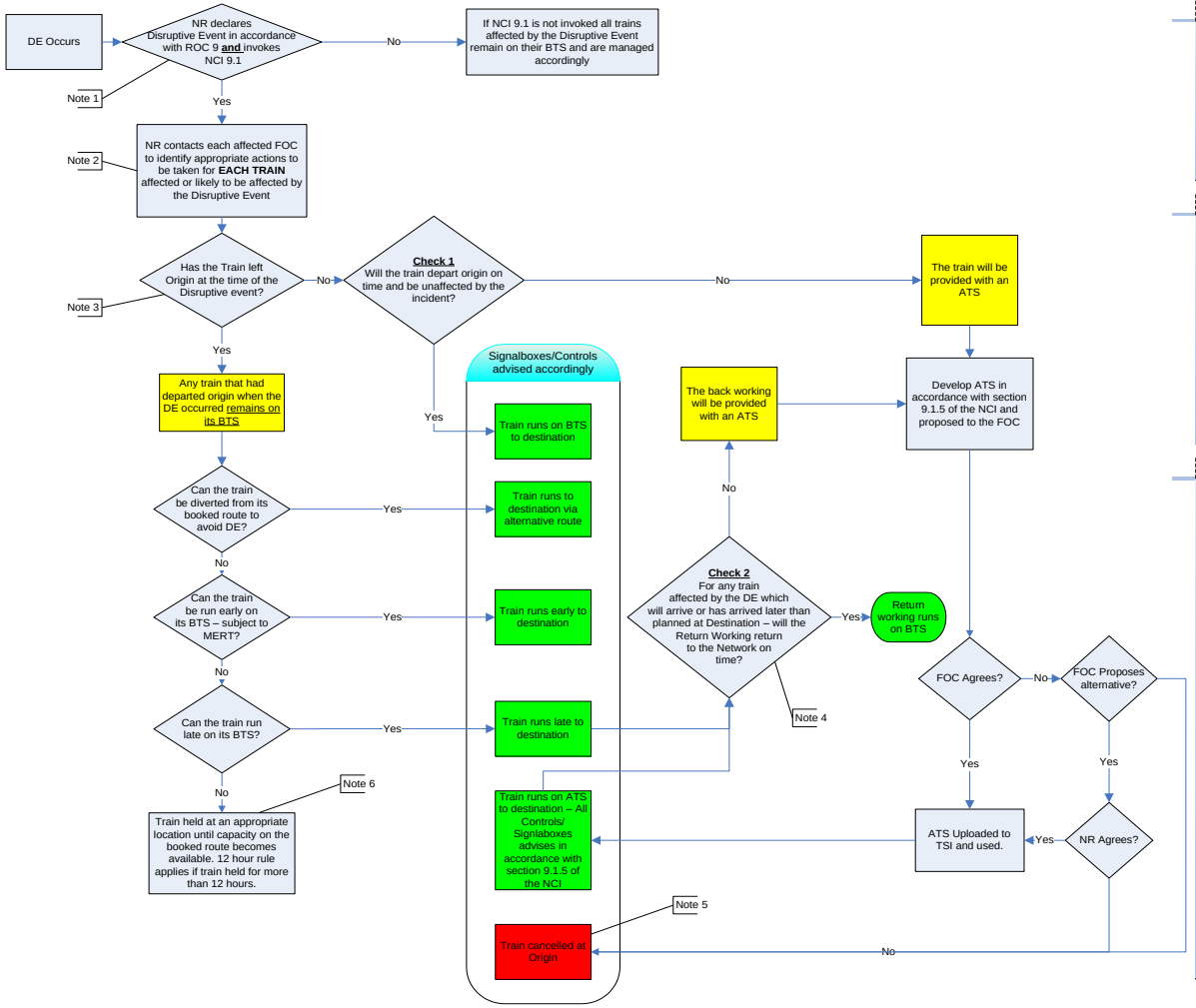
7.3 Responsibility for the Creation of Alternative Train Slots

Once it has been agreed with each affected FOC which trains are to be provided with an ATS the Relevant Network Rail Control will arrange for the new ATS to be uploaded.

Where an ATS is required for a train which originates on another route then it will be the responsibility for the Affected Network Rail Route Control which covers the origin location of the train to create the ATS, at the request of the Relevant Network Rail Control (i.e. if an incident occurs on LNE and a return working from Felixstowe is to be provided with an ATS, then LNE Control must advise Anglia Control of the requirements for that ATS and it will be Anglia Control who will create the ATS).

APPENDIX A

MANAGEMENT OF FREIGHT SERVICES DURING DISRUPTION (NCI 9.1) – JOINT WORKING INSTRUCTIONS



Train Management Options

	Train has left Origin when DE occurs	Train yet to leave Origin when DE occurs
Run Early on BTS	Yes (subject to MERT)	Yes (subject to MERT)
Run Late on BTS	Yes	Yes (subject to RT arrival at destination)
Divert the train	Yes	Yes (provide an ATS)
Cancel	Yes (once over 12 hours late)	Yes (no time limit)
Provide ATS	No	Yes (subject to NCI 9.1)

Definitions

Return Working	Is a train which is not yet on the Network but the previous associated working has been affected by the Disruptive event
Base Train Slot (BTS)	The schedule provided in the WTT for the train.
Alternative Train Slot (ATS)	A schedule agreed between the FOC and NR to be provided as a result of a Disruptive event
Disruptive Event (DE)	As per Network Code part H
Relevant Control	The Network Rail control office that has responsibility for managing the Disruptive Event.
MERT	Management of Early Running Trains as set out in section 4.2.3 of the National Control Instructions

Notes

Note 1 The use of NCI 9.1 is not a mandatory requirement of every Disruptive Event. Many incidents can and will be managed without the need to invoke this process. Instead it is for the Relevant Control, using their professional judgement, to determine whether to invoke the process On a case by case basis. To invoke NCI 9.1 each relevant control should Issue a Tyrell message to all FOC's stating this.

Note 2 The process requires that a full dialogue occurs between the Relevant Control and each affected FOC to determine how affected trains will be managed on the network as a result of the Disruptive Event. The requirements of this dialogue are contained in section 2 of NCI 9.1.3 and set out the information required from each FOC to be able to plan an ATS. If this dialogue does not occur no ATS can be proposed.

Note 3 An ATS can only be proposed for trains which have not left Origin at the time of the Disruptive Event.

Note 4 Where a Return Working will be late coming back onto the network as a result of the inbound service either arriving late or having been provided with an ATS the Return Working should be similarly provided with an ATS (subject to the same process for identifying and agreeing the ATS). It is the responsibility of the Relevant Control to agree with each affected FOC whether there are any Return Workings that will require an ATS. Where an ATS is required for a train which will start on a different route the responsibility for creating the ATS will lie with the routes control for the Origin location working to the request of the Relevant Control.

Note 5 In the event that no ATS can be identified for a train that is scheduled to commence its journey after the Disruptive Event occurred, or no agreement can be reached on the proposed ATS then the train will be cancelled and the onus will be on the FOC to reinstate the train through the submission of a VSTP request when capacity becomes available.

Note 6 12 hour rule. If a train becomes more than 12 hours late on its journey then the train can be cancelled. For the train to go forward a new schedule will need to be created from an appropriate location – this must be done in discussion with the affected FOC.

APPENDIX B

TEMPLATE MFSDD DISRUPTIVE EVENT NOTIFICATION

All Freight Operating Companies

Please be aware that the following incident has occurred / is on-going:

[Incident Title] TRUST DA IRN [TDA No.]

Please be advised that the event detailed above is being reviewed under the Management of Freight Services Protocol contained within the National Control Instructions (NR/L3/OCS/043/9.1 Management of Freight Services During Disruption).

We will be contacting the affected customers shortly in order to seek agreement to apply the Management of Freight Services Protocol to trains wherever applicable, and agreement is obtained prior to the departure of trains on to the network.

Please contact:

Tel: [insert phone]

Fax: [insert fax]

Regards

[Name]

APPENDIX C

TEMPLATE FOR NOTIFYING CHANGES AGREED UNDER MFSDD

All Affected Signal boxes and Route Controls

The following service(s) is running in an Alternative Train Slot:

[Train service details]

[-]

[-]

Please be advised that the above service has been rescheduled under Management of Freight Services Protocol within the National Control Instructions (NR/L3/OCS/043/9.1 Management of Freight Services During Disruption).

This service has authority to run early if a suitable margin exists. If there are any queries regarding the regulation of this service can you please contact the [insert route] Train Running Controller on:

Tel: [insert number]

Fax: [insert fax]

Can all signal boxes at origin locations please be reminded of the need to gain authority from the Train Running Controller for any train over 60 minutes late to enter onto the network?

Regards

[Name]

8. SUMMERY

Summary for Controllers

- An **A**lternative **T**rain **S**lot (ATS) *MUST* be agreed with the FOC and TRC (Freight)
- The Network Rail route that owns the disruptive event must declare the disruptive event to the relevant FOC's before an ATS can be agreed.
- The train must not leave origin until an agreement is reached between Network Rail & the FOC concerned on the scheduling and ATS.
- If a service is delayed by more than 12 hours the train should be cancelled and the FOC should bid for another train path.
- All retimed freight services are to be given a **'Q' code**. Therefore a retimed **4M86** would become **4Q86** OR if coming into Anglia, **4L43** would become **4Q43** for example. [*Note for IECC's areas, these services may be non ARS, so please use special timings patterns where appropriate*]

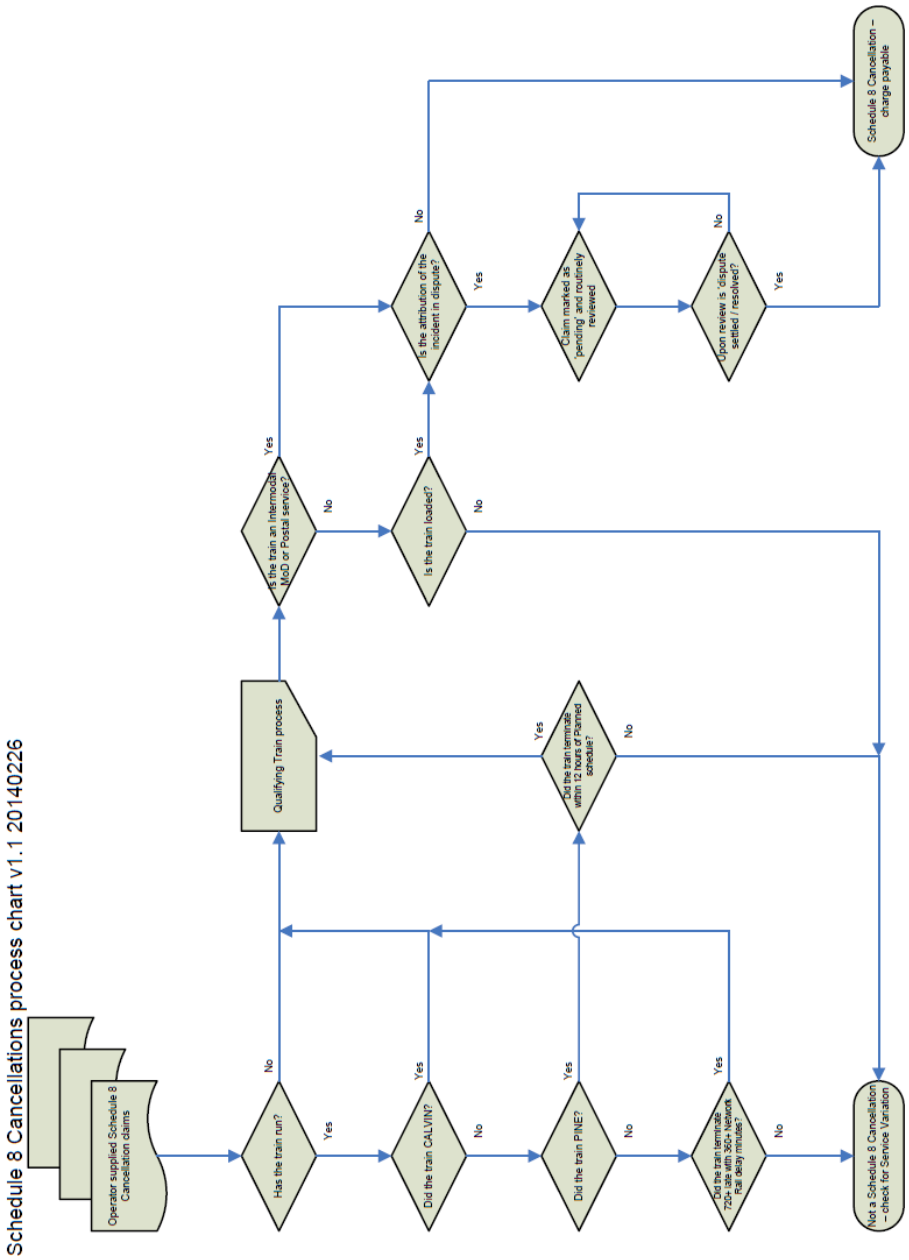
Summery for Signallers / Shift Signalling Managers

- All retimed freight services are to be given a **'Q' code**. Therefore a retimed **4M86** would become **4Q86** OR if coming into Anglia, **4L43** would become **4Q43** for example. [*Note for IECC's areas, these services may be non ARS, so please use special timings patterns where appropriate*]
- SSM's in IECC's areas, where possible, can you make the appropriate amendment in TTP to ensure the amended service runs under ARS.
- All retimed services will have a validated path which will be validated by the control from where the train originates or in the validated booked path of another service.

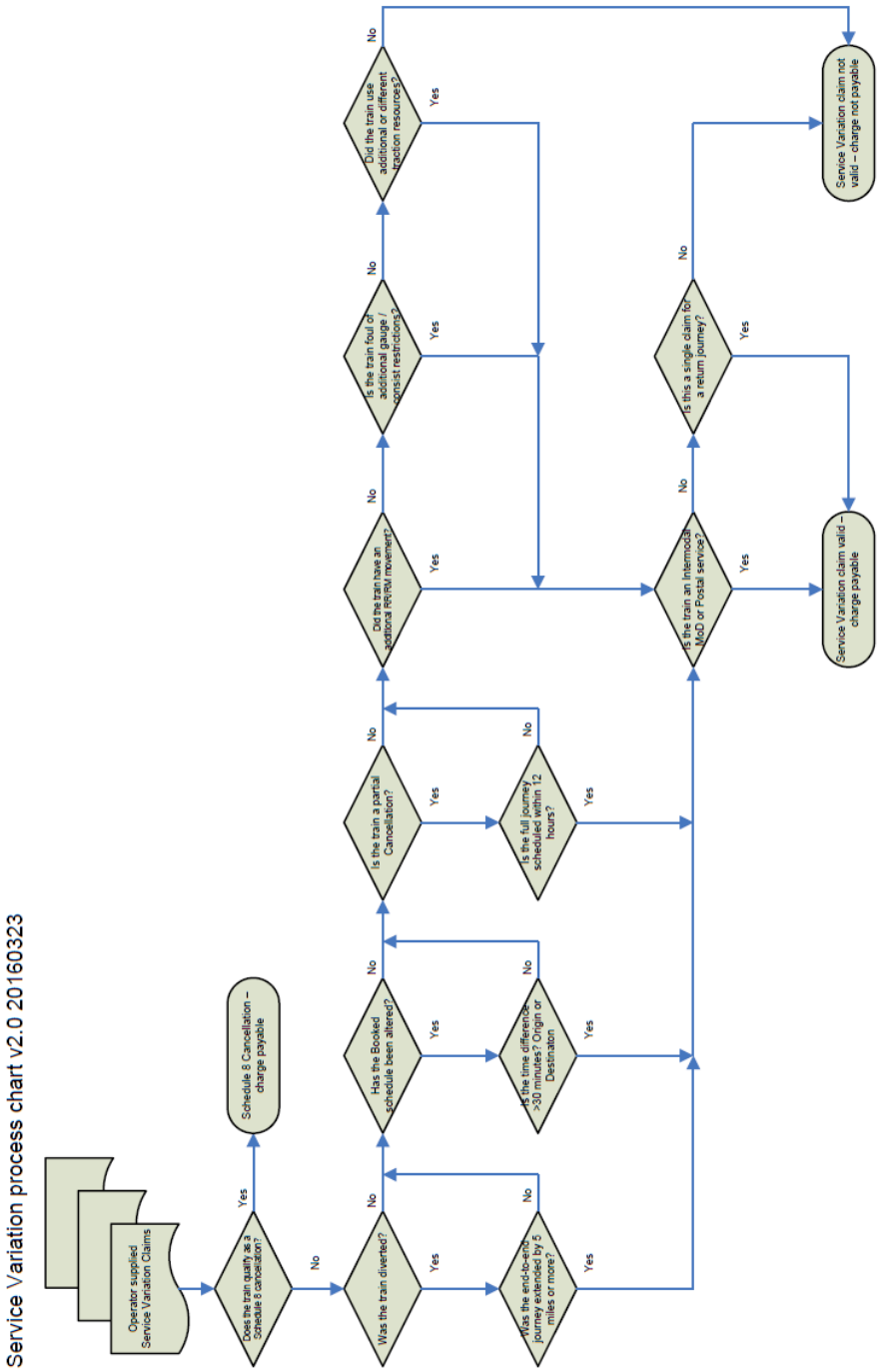
Appendix E

Process Flow Charts

E1 Schedule 8 Cancellation Process



E2 Service Variation Process



Appendix F

Freight Delivery Metric Aggregation Process

FDM Aggregator – Process Note

Process Reference:	
Name of process / report:	FDM Aggregator
Location	\\NC1FG03\NC1FG03-FGroups\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)
Owner of process / report:	Freight Performance Team
Author of process note:	Scott Provan
Frequency of process / report:	Periodic
Preferred day for the process / report:	Tuesday / Wednesday Week 1 (as soon as John Thomlinson has sent cancellations data)
Key data inputs: (what needs to be complete / available before this process can be started)	Business Objects report output John Thomlinson's cancellation data
Dependents:	National FJB Report FPISG Presentation Exec Presentation
Main stakeholder:	ORR, Freight Industry Stakeholders
System requirements:	Business Objects; MS Excel; MS Outlook (Central Freight Performance Mailbox)
Type of output:	MS Excel file
Approximate time for process:	20 minutes (once Business Objects query has run)
Last review date:	02/04/2014
Next review date:	31/03/2015

1. Introduction

1.1. Freight Delivery Metric (FDM) is the percentage of commercial freight trains that arrive at planned destination within 15 minutes of booked time or with less than 15 minutes of Network Rail or non-commercial freight operator delay.

1.2. FDM is the regulatory measure during CP5. The regulator has set Network Rail a target of 92.5% MAA for each year within CP5; however we are aiming to deliver 94.5% as an internal target.

1.3. FDM is calculated by the following:

$$\frac{\sum \text{NR delayed trains} + \sum \text{NR assumed cancelled trains} + \sum \text{NR caused service variations}}{\sum \text{trains run} + \sum \text{NR assumed cancelled trains}}$$

1.4. This process generates four values of FDM:

i. a 'predicted' value of National FDM in week 4 of a reporting period for use in the Period End Flash Summary (PEFS) performance commentary from John Thompson / Alun Fowles, National Performance Team;

ii. a 'provisional' value of National FDM for use in the draft Periodical Operational Performance Report (POPR) for distribution to DfT and other Key Industry Stakeholders.

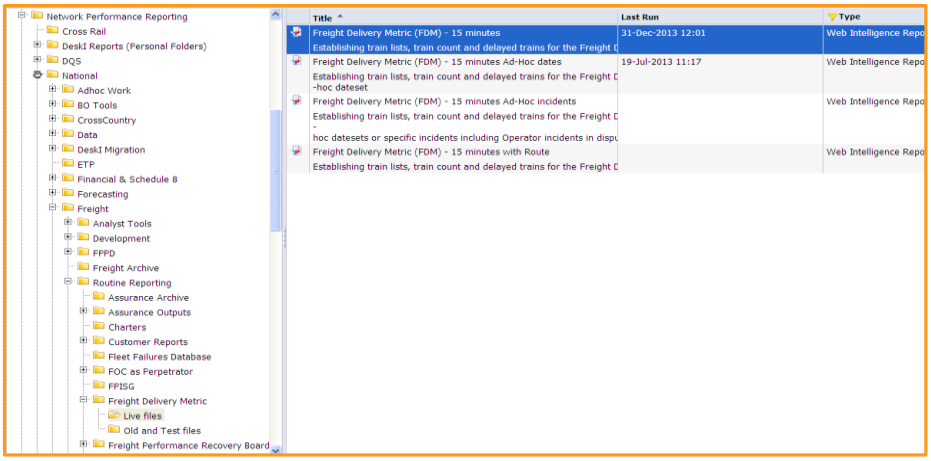
iii. a 'confirmed' period value of National, FOC and SFC FDM. This is reliant on receiving the full Schedule 8 dataset from John Tomlinson.

iv. a set for NTF-OG which takes three weeks of data (two weeks for Schedule 8) and provides a current period and year-to-date value.

1.5. Whilst the output file is not sent directly to anyone, there are a number of dependants and elements of the file will be used in other outputs.

2. Business Objects Query

2.1. **The Business Objects queries are saved to …Freight\Routine Reporting \ Freight Delivery Metric \ Live Files \ Freight Delivery Metric (FDM) – 15 minutes**



2.2. The scheduling of the queries can be checked through the 'History' option in BOPSS. All files are due to run around 10:00 on Friday of week 4, Monday of week 1 and Wednesday of week 1.

2.3. The outputs from the Business Objects query are automatically generated MS Excel files, saving to:

\\nc1fg03\NC1FG03-FGROUPS\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)\BOPSS data files

3. Updating the File – data cut one; period end flash summary (PEFS) values

3.1. Open the PEFS data workbook 'FDM 15 Mins Data – PEFS' and go to worksheet 'TR FDM DT and W15 FPO Zero'.

3.2. Add additional rows underneath each block of data for FDM delay failures, Trains Ran and Within 15, for the remaining days in the period.

3.3. Calculate average values for the additional days, i.e. if calculating the remaining Friday in Week 4:

sum of complete weekdays / the number of complete weekdays

Repeat for the remaining Saturday using Saturday values. Adjustments should be made for Bank Holidays where necessary, with the general principle that they should be treated as a Saturday and not a weekday.

3.4. Insert a row beneath each complete block of data, and sum the values for each operator.

3.5. Go to worksheet 'Trains Ran' and copy as values the new calculated value to the current period (overwriting any populated values), ensuring the Operator codes match. Repeat for 'Delayed Trains' and 'A2F' worksheets.

3.6. Open 'FDM national aggregator 15 mins.xlsx'. Do NOT update the file when prompted. The file is stored at:

\\nc1fg03\NC1FG03-FGROUPS\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)

3.7. Copy and paste values for the past three periods from the PEFS workbook into the 'Trains Ran', 'Delayed Trains' and 'A2F within 15 tabs in the Aggregator file; ensuring the columns for the Operator codes match. Highlight the copied values in RED to highlight that they are not formulae.

3.8. For worksheets 'Int Capes', 'Other Capes' and 'MFSDD SVs', use the latest 'FDM for SFC *yyyy* P*n*' file, emailed each week by John Thomlinson.

3.9. Create a pivot table of the data in the 'Cancellations' tab to count the number of cancellations per Operator by service type, as per below:

Count of Count	Count	
FOC	1	2
DBC	2	27
DRS	2	
Flr HH		6
GBRf	5	4
Grand Total	9	37

Service Type:
1 – Intermodal
2 – Non-intermodal

To allow for the non-claimable cancellation of balancing empty working, the non-intermodal count should be doubled as per below, and then an uplift value for each type calculated to account for the remainder of the period. Typically John's dataset will cover three weeks, therefore the uplift would be (*x*/3)*4, as per below:

Count of Count	Count		Uplift values	
FOC	1	2		
DBC	2	54	3	72
DRS	2		3	0
Flr HH		12	0	16
GBRf	5	8	7	11
Grand Total	9	74	12	99

Use the Roundup function to ensure that there are no decimal values in the uplift, and then copy these across to the latest period on the 'Int Capes' (Intermodal) and 'Other Capes' (Non-intermodal) worksheets in the aggregator file.

Follow the same process for the 'MFSDD resched' dataset in John's workbook, counting the MFSDD Flag for each Operator, and calculating the uplift as before. Note all MFSDD

events are single count events. Copy these values across to the latest period in the 'MFSDD SVs' worksheet in the aggregator file.

3.10. Select worksheet 'Assumed Capes' and copy the formula down for the new period. Sense check a couple of the calculated values and ensure that there are no decimal values.

3.11. Group select the worksheets'D2 all' to 'XH all'. Go to the last row of data in column E and select across to column AM then copy down by 'auto-fill' to the current period of reporting.

3.12. Sense check the worksheets in turn – test a sample of formulae.

3.13. Select worksheet 'NATIONAL all'

3.14. Highlight the row of the most recent data – this will be the previous period, columns B to AB.

3.15. Copy the highlighted row of data downwards to create a new row. Sense check a couple of the calculated values.

3.16. Group select the worksheets 'FDM All Periods' and 'FDM MAA All Periods'.

3.17. Highlight the cells of the most recent data from column E through to column X – this will be the previous period.

3.18. Copy the highlighted cells of data downwards to create a new block.

3.19. Sense check the worksheets in turn – test a sample of formulae.

3.20. Repeat for worksheets 'A2F All periods' and 'A2F MAA'

3.21. Chart updates will be performed after 'confirmed' values have been generated to avoid the risk of duplicate values of FDM that are slightly different.

3.22. Save and close the workbook.

3.23. Using the previous PEFS email as a template, email Rachel Gilliland and John Thompson (IPRM) (cc Alun Fowles, DL-Freight_Performance_Team, Andrew Griffin and Lysette Rowley) with the freight commentary for the period; using the following FDM incident file to add relevant context:

\\NC1FG03\NC1FG03-FGroups\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)\R-FDM BOPSS data files\R-FDM period consolidation file.xlsm

4. Updating the File – data cut two; provisional values

4.1. Open 'FDM national aggregator 15 mins.xlsx'. Do NOT update the file when prompted. The file is stored at:

\\nc1fg03\NC1FG03-FGROUPS\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)\FDM national aggregator 15 mins.xls

4.2. From the 'Edit' 'Links' menu, change the data source from 'FDM15 Mins Data – provisional.xls' to 'FDM 15 Mins Data - provisional.xls'. Open the source file once the changes have been made.

4.3. In the Aggregator file, check worksheets 'Trains Ran' and 'Delayed Trains' to see that updates have been made to the formulae.

4.4. Check the Operator worksheets. Sense check the worksheets in turn – test a sample of formulae.

4.5. Check worksheets 'NATIONAL all', 'FDM All Periods' and 'FDM MAA All Periods'.

4.6. Sense check the worksheets in turn – test a sample of formulae.

4.7. Updates to cancellation and service variation values will not be needed here.

4.8. Chart updates will be performed after 'confirmed' values have been generated to avoid the risk of duplicate values of FDM that are slightly different.

4.9. Save and close the workbook.

5. Updating the File – data cut three; confirmed values

5.1. Open 'FDM national aggregator 15 mins.xls'. Do NOT update the file when prompted. The file is stored at:

\\nc1fg03\NC1FG03-FGROUPS\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)\FDM national aggregator 15 mins.xls

5.2. From the 'Edit' 'Links' menu, change the data source from 'FDM 15 Mins Data - provisional.xls' to 'FDM15 Mins Data – cofirmed.xls'. Open the source file once the changes have been made.

5.3. In the Aggregator file, check worksheets 'Trains Ran' and 'Delayed Trains' to see that updates have been made to the formulae. There may be some #N/A! reference errors, these are caused by some of the minor operators not running trains in the past two years. Adds additional columns to the BOPSS data file as needed, then save it.

5.4. On worksheets 'Trains Ran', 'Delayed Trains' and 'A2F within 15' copy down the previous row with formulae to over-write the red provisional values.

5.5. For worksheets 'Int Capes', 'Other Capes' and 'MFSDD SVs', the latest dataset for the period is needed from John Thomlinson. Using his data, populate the required cells for each operator ensuring the operator codes are matched. Also ensure 'Other Capes' are twice the stated values from John as each train is counted twice, unlike Inter-modal cancellations. This update is best completed using a new pivot table of the data he sends through. The data file he uses ('FDM for SFC yyyy Ppp.xls') should be saved to here, only the data file is needed to be saved, additional pivot tables etc. can be discarded:

\\Nc1fg03\nc1fg03-fgroups\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)\FDM by SFC\SFC Cancellations Data

5.6. Ensure the data in red is over-written by the new values from John. .

5.7. Check the values shown are integers.

5.8. Check the Operator worksheets. Sense check the worksheets in turn – test a sample of formulae.

5.9. Check worksheets 'NATIONAL all', 'FDM All Periods' and 'FDM MAA All Periods'.

5.10. Sense check the worksheets in turn – test a sample of formulae.

5.11. Check worksheets 'A2F All periods' and 'A2F MAA'.

5.12. Sense check the worksheets in turn – test a sample of formulae.

5.13. Go to the chart sheets (orange worksheet tabs at the right hand side). Amend the source data to include the latest period. Amend the colours of bars to ensure only the latest period and

previous years of this period are highlighted in a darker blue and the value is visible. Do this for all seven charts (national and six operators).

5.14. Close the linked source file.

5.15. Save and close the workbook.

6. Dissemination

6.1. The file does not get disseminated by e-mail. From the National Aggregator file, create a new file using the Export add-in with the worksheets 'FDM All Periods' and 'FDM MAA All Periods. Save the new file with the naming convention 'FDM results extract Pyypp.xls' (with Pyypp being the period number) to here.

\\NC1V02FDC01\DFSRoot$\HQ\HQ14Groups\NEWCOMM\CUSTOMER SERVICE\Freight Performance\FDM outputs

6.2. Publish the new output file to the Freight Team SharePoint under Performance Team / Freight Delivery Metric (FDM). E-mail the wider Freight Team giving advice of headline results (Period, YTD and MAA results) include a hyper-link to the SharePoint file too.

6.3. Go to the Freight Performance Team Taskmaster and mark the FDM model / FDM aggregator as completed.

7. Updating the File – data cut four; NTF-OG values

7.1. Open 'FDM national aggregator 15 mins.xls'. Do NOT update the file when prompted. The file is stored at:

\\nc1fg03\NC1FG03-FGROUPS\Central_Freight_Performance\Routine Reporting\Freight Delivery Metric (FDM)\FDM national aggregator 15 mins.xls

7.2. Go to worksheet 'NTF-OG'

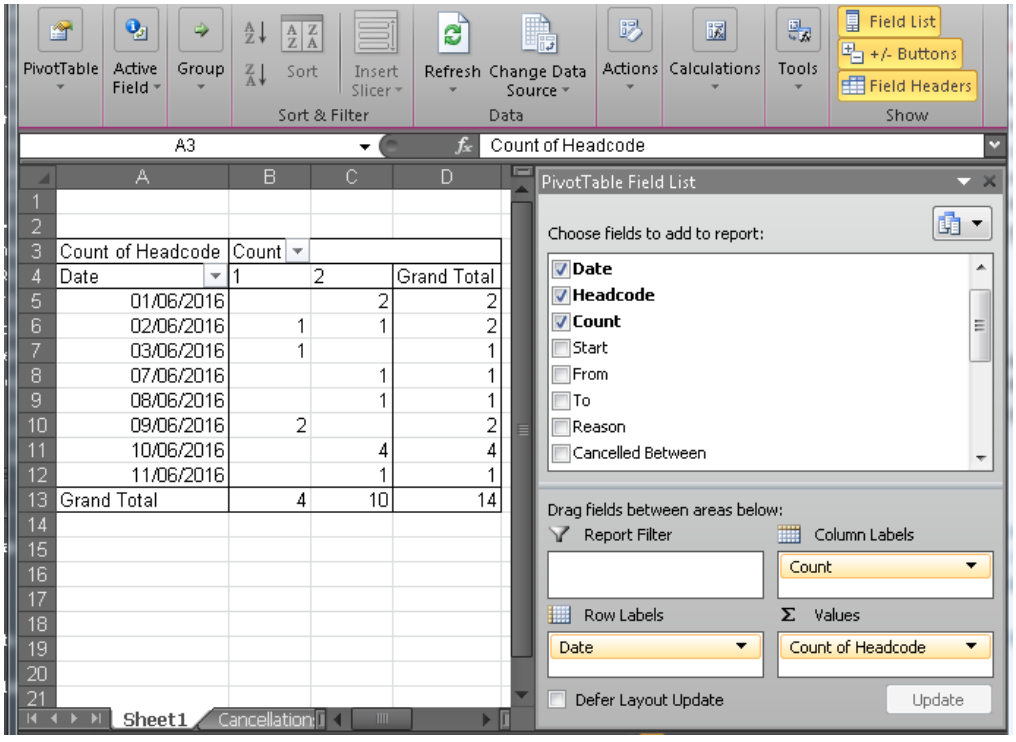
7.3. Update cell A3 with the last closed period value. This should automatically update cells C5 to F5. Check the update has worked correctly.

7.4. After row 10 values shown in Blue are formulae

7.5. Values for the current period and YTD are obtained from the Freight Performance Calendar Trains Ran and Delayed Trains. This will be three weeks of data. Manually type the number of Trains Ran and Delayed Trains; cells B22:C24

7.6. Cancellation and Service Variation values are taken from the files attached to John Thomlinson's weekly cancellation update e-mail. Given the timing of the NTF-OG dataset, this will only ever be two weeks of the current period.

7.7. Use the FDM by SFC workbook and insert a new pivot table sheet with Count of Headcode as a value, Date as a row and Count as a column.



Count of Headcode	Count		
Date	1	2	Grand Total
01/06/2016		2	2
02/06/2016	1	1	2
03/06/2016	1		1
07/06/2016		1	1
08/06/2016		1	1
09/06/2016	2		2
10/06/2016		4	4
11/06/2016		1	1
Grand Total	4	10	14

7.8. Select the relevant days for week 1 to show the total of Intermodal cancellations (Count 1) – this value can be copied to the Aggregator worksheet (cell E2); non-intermodal

cancellations are Count 2 values – the Count 2 values need to be doubled before copying to cell F22.

7.9. Repeat for week 2 values.

7.10. Repeat for MFSDD values – the 'Count' column header can be deleted as source data doesn't have it

7.11. Once happy with the update, save and close the Aggregator file.

7.12. The cancellation file can be closed – no need to save changes.

7.13. E-mail NRIndustryPerformance@networkrail.co.uk with "NTF-OG freight FDM values" in the subject header, stating the values are ready in the file – they link directly to it.

8. New Reporting Year Roll Over

8.1. Reschedule the Business Objects query as required for Period 1 reporting in the new reporting year.

8.2. Check the period references are correct in the source data files.

8.3. When copying down the data or formulae from the previous period correct the reference e.g. 2014/15_P01 not 2013/14_P14.

8.4. Amend the chart on worksheet 'FDM Chart' to show the new reporting year and the previous year.

8.5. Go through every worksheet and re do the formulas for YTD calculations.