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May 2013

Dear colleague

Network Rail Schedule 8 benchmarks in CP5

ORR is currently undertaking its Periodic Review 2013 (PR13), which will set the outputs and funding for Network Rail for Control Period 5 (CP5). As part of this process, the industry is reviewing key aspects of the Schedule 8 regime, which provides compensation for unplanned disruption.

The two main features of Schedule 8 which are being reviewed as part of PR13 are:

- **Payment rates** – These govern the size of payments received or made by Network Rail and Train Operating Companies (TOCs) when performance is better or worse than target¹.
- **Benchmarks or ‘performance points’** – These are the ‘targets’ contained in Schedule 8, against which performance – as defined by ‘Average Minutes Late’ (AML) – is measured. These benchmarks are set in relation to each Service Group defined in the Track Access Agreement (TAA).

The purpose of this letter is to commence work towards setting Network Rail’s Schedule 8 benchmarks for CP5. By means of this letter, we are inviting stakeholders’ views on the principles, processes and timescales for setting Schedule 8 benchmarks (at Service Group level) for CP5. We set out a small number of specific questions, below, and are interested in any other views from stakeholders in relation to Schedule 8 benchmarks in CP5. The closing date for responses is **29 May 2013**.

¹ Work to reset Schedule 8 payment rates for CP5 is ongoing, and is being undertaken by independent consultants, Halcrow, overseen by ORR and Network Rail.



1. Workstreams for setting Network Rail Schedule 8 benchmarks in CP5

The High Level Output Specifications (HLOSs) require Network Rail to plan to deliver 92.5 per cent PPM in England & Wales and Scotland by the end of CP5. We expect Network Rail Schedule 8 benchmarks – although they are specified at a more granular (i.e. Service Group) level – to be set to be consistent with these requirements.

There are three distinct workstreams associated with setting Network Rail Schedule 8 benchmarks for CP5. These are:

- Establishing principles for deciding Network Rail Schedule 8 benchmarks in CP5;
- Developing PPM trajectories by TOC to form the basis of Network Rail Schedule 8 benchmarks (these will be consistent with achieving the HLOSs overall); and
- Converting these PPM trajectories by TOC to Schedule 8 benchmarks².

These three workstreams are discussed in turn, below.

We propose that Network Rail leads the work to set Network Rail Schedule 8 benchmarks for CP5. This was supported at the passenger Schedule 8 working group in early 2013. As part of this process, we expect to engage fully and constructively with TOCs – not only in relation to the technical work to translate PPM performance trajectories into Schedule 8 benchmarks – but also in relation to establishing performance trajectories in the first instance. ORR will also scrutinise the work around setting TOC-level PPM trajectories and converting these into Schedule 8 benchmarks.

Consultation question 1

Do you agree that Network Rail should lead the work to set Network Rail Schedule 8 benchmarks for CP5? Do you have any suggestions in relation to industry engagement around this process?

2. Establishing principles for Network Rail Schedule 8 benchmarks in CP5

In order for work to proceed to establish Schedule 8 benchmarks for CP5, it is necessary to establish a set of principles that can guide the work. Such principles are needed to determine the set of TOC-level PPM trajectories to be transposed to Schedule 8, and to provide the framework for technical exercises to convert Network Rail's regulatory performance targets and routes' own performance projections into Network Rail's benchmarks for Schedule 8. This letter commences the process of

² It may be appropriate to use the regulatory trajectory expressed in terms of delay minutes rather than PPM, as the basis to convert to Schedule 8 benchmarks. For the purposes of this letter, we refer to PPM for simplicity. Achieving the HLOS outputs will require a degree of TOC-on-Self improvement. If PPM trajectories are used as the basis for Schedule 8 benchmarks for CP5, it will be necessary to take account of TOC-on-Self improvement in the technical exercise described in Annex 1.

establishing a set of principles to guide the setting of Network Rail Schedule 8 benchmarks.

We propose the following set of principles:

- i. CP5 Schedule 8 benchmarks should reflect expected CP5 performance **by TOC³**.
- ii. For the financial year 2014-15, Schedule 8 benchmarks should be consistent with PPM performance trajectories contained in the JPIPs 2013-14 (published in March 2013).
- iii. For the financial years 2015-16 to 2018-19, Schedule 8 benchmarks should be consistent with Network Rail routes' whole-CP5 PPM performance trajectories. These will be developed working with TOCs, agreed by Network Rail's central performance team and be consistent with achieving 92.5% PPM by 2018-19, as required by the HLOSs.
- iv. Schedule 8 benchmarks should be set on the basis of the most recent data and relationships between Schedule 8 AML and PPM and/or delay minutes (with the choice of PPM and/or delay minutes being decided on the basis of statistical and operational criteria, working with ORR).
- v. A rebenchmarking exercise should take place if there are material changes to timetables, for example as a result of refranchising.
- vi. If 'change control' is used in CP5 to adjust regulatory outputs, appropriate adjustments should also be applied to Schedule 8 benchmarks.

Consultation question 2

Do you agree with each of the principles set out, above? If you do not agree with any of the principles, it would be helpful if you could explain why and suggest alternatives, if appropriate.

Stakeholders are invited to provide views on these principles by responding to this letter. In light of stakeholders' comments, Network Rail will submit a revised set of principles to ORR. ORR will then consider Network Rail's proposals, together with representations from other stakeholders, and confirm the principles in the summer of 2013.

3. Developing PPM trajectories by TOC to underpin Network Rail Schedule 8 benchmarks

The process for developing TOC-level PPM trajectories commenced with the publication of the Performance Plan in January 2013, which formed part of Network Rail's Strategic Business Plan (SBP). The publication of the JPIPs 2013-14 in March 2013 provided the latest view of CP4-exit PPM performance. Work will be finalised, shortly, to provide a view of the most likely CP5-entry (i.e. 2014-15) performance by TOC. As per the principles above, we expect this to provide the basis for the

³ It may be appropriate for Schedule 8 benchmarks to reflect performance trajectories below TOC level in a small number of instances, for example if a TOC has particularly diverse set of services or if a major enhancement is expected to affect a subset of its services.

Schedule 8 benchmarks (at Service Group level) for the first year of CP5. The level of granularity represents a marked improvement compared to CP4, when performance was estimated by market sector.

Work is ongoing between TOCs and Network Rail routes to establish performance trajectories for the remainder of CP5. Ultimately, all plans will have to be agreed by Network Rail's central performance function and be consistent with achieving 92.5% PPM by 2018-19, as required by the HLOSs. We expect these TOC-level performance trajectories to be finalised in the summer of 2013.

We would encourage TOCs to engage actively with their routes in order to arrive at the appropriate performance trajectories for CP5.

Consultation question 3
Do you have any comments on engagement between Network Rail routes and TOCs in establishing PPM performance trajectories by TOC for CP5?

4. Converting PPM trajectories by TOC to Schedule 8 benchmarks

The exercise to convert these TOC-level PPM trajectories to Schedule 8 benchmarks (which are defined in terms of AML at Service Group level) is a technical one based around regression analysis. This represents an improvement relative to PR08, when a 'one-for-one' relationship was typically assumed between AML and PPM. The CP5 process is explained in Annex 1. We will invite TOCs and/or Owing Groups to review the models relating to them between May and July 2013. ORR will also review the modelling work.

Consultation question 4
Do you have any comments about the process for converting TOC-level PPM trajectories into Schedule 8 benchmarks?

5. Proposed process and timescales

A provisional process map with timescales is set out in Annex 2 to this letter. This process map is provisional, and will need to evolve as PR13 moves forward, especially in light of ORR's Draft Determinations which are due in June 2013.

Table 1, below, sets out the key dates for TOC engagement as part of this process.

Table 1 - Key stages for TOC engagement

Date	Activity
May 2013	Consultation period for industry letter proposing principles for Schedule 8 benchmarks for CP5.
12 June 2013	ORR Draft Determination.
June 2013	Network Rail submits revised set of Schedule 8 principles to ORR.
July 2013	ORR confirms Schedule 8 benchmark principles.
May to July 2013	Network Rail routes develop TOC-level PPM trajectories.
June to August 2013	Network Rail develops statistical models and liaises individually with TOCs.
August 2013	Industry consultation on Schedule 8 benchmarks.
September 2013	Network Rail submits proposed benchmarks to ORR for approval.
October 2013	ORR Final Determination.

Consultation question 5

Do you agree with our provisional proposals for timescales and processes for setting benchmarks in CP5? Do you have any further comments?

6. TOC benchmarks

We expect that TOC benchmarks (as opposed to Network Rail benchmarks) in Schedule 8 to be set on the basis of a two-year 'calibration period', typically taken to be the financial years 2010-11 and 2011-12 (although it may be appropriate to deviate from this time period in some circumstances). The technical work for establishing these benchmarks is being led by Halcrow, overseen by Network Rail and ORR. We expect TOC benchmarks to be constant over time in CP5 (i.e. we do not expect them to become more demanding), and we do **not** expect a trajectory to be applied to account for any changes in TOC performance between the benchmarking period and the beginning of CP5. This approach has been adopted in previous control periods, and reflects the fact that TOCs are incentivised to improve performance by means other than Schedule 8, especially in order to grow revenue and satisfy franchise commitments.

7. Conclusion

We invite stakeholders' views on the above questions and any other issues relating to Schedule 8 benchmarks in CP5. The closing date for responses is **29 May 2013**. If you have any questions in the meantime, please contact me using the details above, or Caitlin Scarlett on caitlin.scarlett@networkrail.co.uk or 020 3356 9325.

Yours faithfully

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Senior Regulatory Economist

Cc. Robert Mills, ORR

Annex 1 – High level methodology for converting PPM performance trajectories to Schedule 8 benchmarks

This Annex sets out the process for converting PPM performance trajectories by TOC into Network Rail Schedule 8 benchmarks.

Step 1 – Establish historic average performance

The first step involves establishing the historic average performance, as measured by AML (the measure of performance used in Schedule 8). This is done for each service group using a two-year ‘calibration period’, typically taken to be the financial years 2010-11 and 2011-12 (although it may be appropriate to deviate from this time period in some circumstances). This process is being led by consultancy Halcrow, which is planning a full engagement programme with TOCs. We expect this work to be completed by June 2013.

Step 2 – Estimate the relationship between Passenger Performance Measure (PPM) and Average Minutes Late (AML)

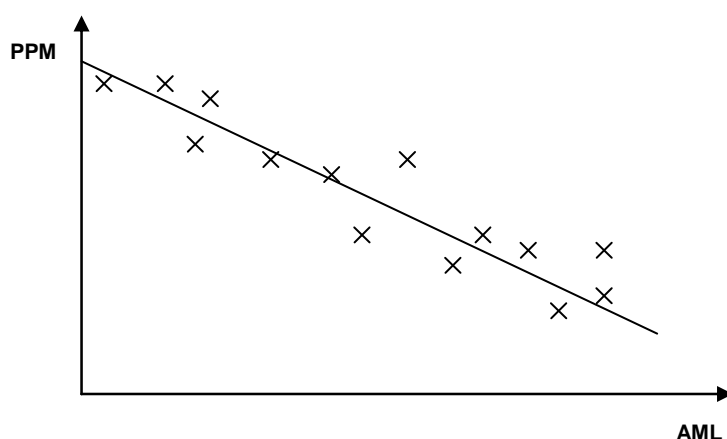
The HLOSs are specified in terms of the Passenger Performance Measure (PPM)⁴, as are Network Rail routes’ performance trajectories, which are being developed with TOCs. However, Schedule 8 benchmarks are specified in terms of AML. Therefore, in order to ‘transpose’ the HLOS requirements and routes’ performance trajectories into Schedule 8, it is necessary to establish the relationship between PPM and AML.

We plan to estimate these relationships by means of regression analysis. A sample regression is illustrated in Figure 1, below. We would expect the relationship to be downward sloping (as illustrated in Figure 1). In estimating the relationships, we will seek to be flexible and choose models based on careful statistical testing. Wherever possible, we will seek to undertake the analysis at a granular level – for example by deriving AML-PPM relationships for each Service Group individually – but in some circumstances it may be more appropriate to use more aggregated data.

⁴ Separate targets relate to England & Wales and Scotland.



Figure 1 – PPM-AML relationship



Network Rail is expecting to lead the process of estimating these relationships, consulting with TOCs individually in order to establish the most appropriate models and relationships.

Whilst every care will be taken to estimate the PPM-AML relationships as rigorously as possible, historic experience of Schedule 8 calibrations has shown that it is not always possible to establish relationships that are fully robust over the course of entire control periods. This is for a number of reasons:

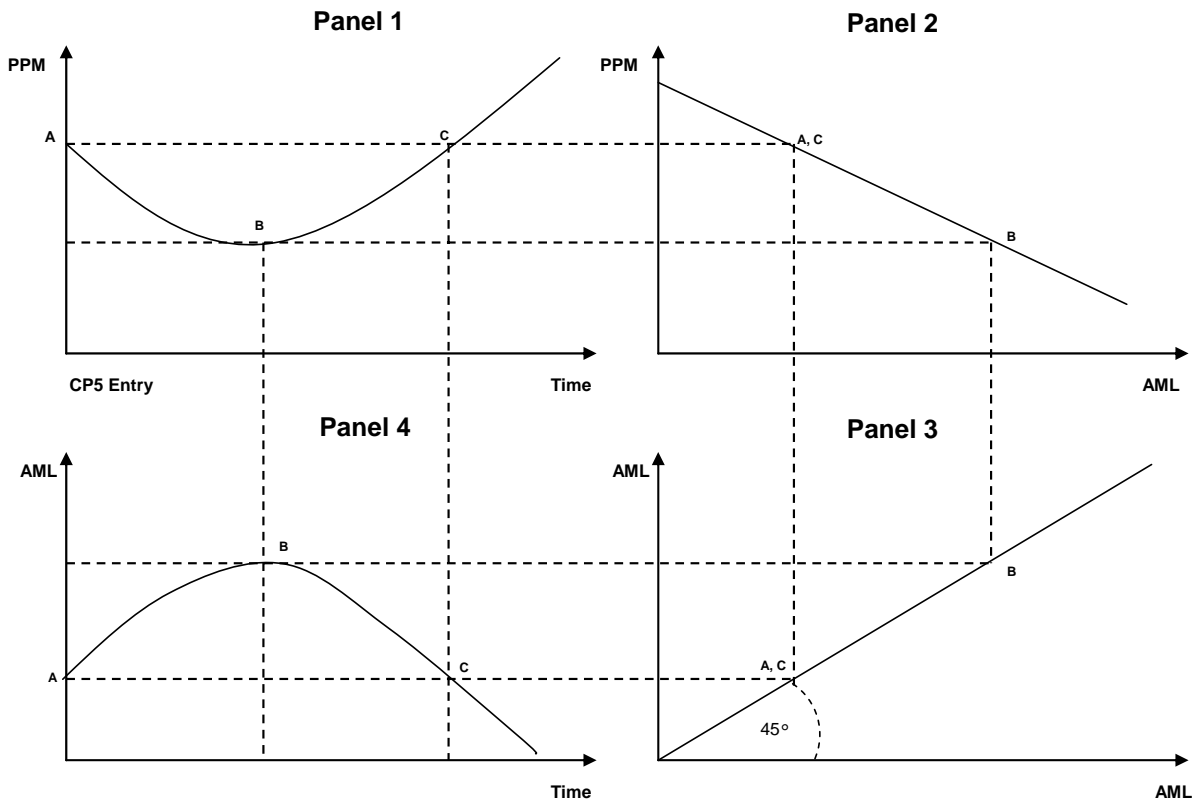
- Changes to timetables (especially as a result of refranchising), infrastructure improvements and other factors can lead to 'structural' changes in the nature of the relationship; and
- 'Nonlinearities' in the PPM-AML relationship that cannot be picked up through regression analysis.

It is important that the industry understands these risks. In addition, and as is currently the case, it is important that a re-benchmarking exercise takes place as a result of material changes to timetables, for example as a result of refranchising.

Step 3 – Convert PPM trajectories to Schedule 8 benchmarks

Having estimated the relationship between PPM and AML, it will be possible to convert PPM trajectories (set at TOC level) into AML trajectories for purposes of setting Schedule 8 benchmarks. This is illustrated in Figure 2, below.

Figure 2 – PPM to AML trajectories



Panel 1 shows an illustrative PPM trajectory for a particular service group in CP5. Point A represents CP5 entry, as set out in the JPIPs 2013-14 (see principle (ii) in the body of the letter). In this particular example, PPM falls towards point B – reflecting, say, a major enhancement scheme – before increasing to point C and beyond.

Panel 2 plots the regression relationship for the Service Group derived in step 2, above. This is used to convert PPM into AML by reading across horizontally from panel 1. For example, it converts PPM at points A, B and C (and all other points) into the corresponding AML.

Panel 3 simply plots AML against AML, and therefore gives a 45° line through the origin. This is a simple geometric device which ‘reflects’ AML from the x-axis of panel 2 to the y-axis of panel 3 (and on to panel 4).

Finally, panel 4 allows us to plot the AML trajectory across time i.e. provides the performance trajectory in AML terms – the Schedule 8 benchmark. It does this by following the AML from panel 3 to the corresponding time from panel 1. For example, it can be seen that the level of AML at point B in panel 3 has a corresponding time in panel 1, which provides a point on the curve in panel 4.

Annex 2 – Provisional process map

Draft Determination accepts NR's April proposal

