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Dear David

Access to the East Coast Main Line (ECML): CH2M Report

Following the release of the CH2M Report, Alliance has the following comments on its contents.

Initially we have concerns over methodology. On the one hand the ORR has commissioned and accepted a recent LeighFisher report (and circulated it as being relevant to the ECML applications) and on the other hand they say they are content with CH2M's approach (in their note accompanying the report). Yet these two reports use markedly different approaches (gravity model versus station choice model) and neither acknowledges the existence of the other.

We then find it surprising that despite starting to prepare this Report in October 2014, CH2M would start by suggesting that the applications go beyond the scale of previous applications in their number, variety and complexity. This is not the case, and in 2009 for example, the ORR considered applications from:



- NXEC for its 'SLC2' timetable (very similar to VTEC core),
- Grand Union for rights between King's Cross and Bradford,
- Grand Central for additional services between King's Cross and Sunderland,
- Hull Trains for firm rights for its King's Cross Hull service,
- First Group for rights to a new service between King's Cross and Harrogate,
- Platinum Trains for rights for a new service between King's Cross and Edinburgh/ Aberdeen.

CH2M state it has been extremely challenging for them, "stretching both the frontiers of current passenger demand forecasting research and the limits of the data available to us". The ORR has been considering open access track applications since 1999, and not only has a wealth of experience in this area, but has also built up a significant body of evidence, with previous modelling and evaluation undertaken by ARUP and MVA with further input from others.

The work CH2M has been tasked with is no different from any other open access application to have been made, save for the fact they appear wedded to an unseen First Group model that pre-supposes that current operators (both franchise and open access) have no grasp on yield management.

The total reliance on yield within CH2M's work completely overlooks the fact that all long-distance operators currently use sophisticated yield management systems of their own. On 28 August Alliance provided more detailed proposals for its own fare structure, including its expected dedicated advance fare levels and volume. The fare levels were benchmarked against both Grand Central's successful fare offer and VTEC's current (as of Summer 2015) range of advance fares. The forecast volumes of advance tickets at each level and inter-available tickets by type were also benchmarked against Grand Central's proportions.

Alliance is forecasting an overall yield similar to VTEC's for two main reasons:

- It is based on a whole suite of fares, dedicated and inter-available, across first and standard classes, and so is not comparable to an operator offering a very high density one (standard) class service, with virtually all its seats offered as dedicated advance tickets.
- 2. Alliance's proposal is for a high quality service that is around 20 minutes faster to Edinburgh than VTEC's so it would be unrealistic to assume we also offer much lower fares without being overcrowded.



However, our forecast fares structure is based on offering around 1600 seats a day between either Edinburgh or Newcastle and London at around £20. It is this segment of the market that should be directly compared with First Group's application, not the average yield.

We note specifically that CH2M has stated at 3.3.2.4: "Alliance's fares proposal in 2014/15 prices is very similar to VTEC's existing offer, with a similar average yield. We therefore have made an assumption that Alliance will offer the same average fares as VTEC for the relevant flows"

At 6.3.3 CH2M stated: "The relatively low NPV [Edinburgh tilt], when compared to other options, is a function of the high operating cost of an hourly 9-car Pendolino service, and also there is no benefit from a reduction in fares"

This 'assumption' is plainly wrong, and in response to our letter of 28 August the ORR wrote on 22 September: "you have now provided more detail to us on your fares proposals which CH2M is incorporating into its modelling. In particular, CH2M will be applying all its overlays to MOIRA to all the applications in a consistent way, including those relating to air-rail market shares. CH2M has also set out further timetable options that explore the sensitivities of the modelling results to variations in the ECTL timetable", then continue: "With respect to fares, our policy, set out in our criteria and procedures, is that we expect to take explicit account of differential dedicated fares on new competing services where it is material and practical to do so. For competing applications, we model the impacts of each application at a level of detail that is proportionate to the size and characteristics of the application (and, where relevant, other applications against which it is being compared), taking account of best available evidence".

Alliance will offer a significant number of standard class fares at a similar price to that proposed by First Group, but offering them via a more frequent service and in a significantly improved travelling environment. CH2M's work has ignored this part of Alliance's application, and as can be seen in their Figure 3, no revenue from fares generation has been included. Based upon a more frequent service of a higher quality with a similar number of seats available, the generation from fares for Alliance should be greater than that shown for First Group.



We have already advised the ORR about our concern in this area, and would expect CH2M to update its work and apply its applications in a consistent way.

This part of our response is divided into three sections. In Section 1 we discuss major issues with the assessment. These relate both to substantive concerns with the report and other issues relevant to the appraisal. This is followed, in Section 2, by detailed comments on the CH2M report covering apparent errors, omissions and points of clarification. We do not repeat the substantive issues in Section 2, although they are clearly important in considering revisions to the report. Further comments are then contained in Section 3.

1. Substantive Issues

Fares

The largest area of concern with the work set out in the report relates to the modelling of fares.

The PDFH methodology used to assess fare competition takes account of the change in market share that would result from a new entrant competing on price relative to the market shares predicted by MOIRA and then assesses the demand growth that would result from lower fares. We agree that both these effects are relevant, although we are concerned that the methodology is not adequate to fully assess the fares issues raised by the applications.

Some applications are likely to result in significant switching between ticket types and potentially to the development of new fare products. We accept that this is a consequence of the available modelling methodologies, but it should be recognised as a risk area. This particularly applies to the First application which is reliant on a very low yield.

In addition we have a major concern about the way that market growth has been modelled. It is assumed that if one operator reduces fares their market share will increase (correctly) but that the benefits of the lower weighted average fare across both operators will result in generated demand for each of them. This creates the potential situation where the operator who does not reduce fares (or reduces them less) is allocated extra revenue because of the lower fares offered by its competitor.



It appears that the model generates higher market growth than change in market share in certain (leisure) market segments, resulting in the bizarre situation that a reduction in fares by an open access operator results in an increase in revenue for VTEC. This may reflect the structure of the currently available models, but cannot, in any circumstance, be considered realistic. We note that this seems to be a major issue in relation to the First Group Edinburgh application, where the Fares module reduces abstraction by c.£8 million in Option 7 compared to a predicted level of Generalised Journey Time (GJT) abstraction of c.£17 million. This is sufficient to have a very significant impact on the Generation: Abstraction ratio. We note similar impacts with the other First Edinburgh options (and a small impact with the Alliance West Yorkshire/North Lincolnshire application). We consider that generated demand resulting from fare reductions should be applied only to those operators reducing fares and in proportion to the fare reduction that they make in each market segment.

As we pointed out in our comments on CH2M's Methodology Report, we are also concerned about the modelling of fares competition with the airlines in the First Group Edinburgh application. We cannot be confident that the predicted transfer from air is realistic for two reasons. Firstly, as Alliance and AECOM have stated repeatedly, there is a major issue of transparency with this element of the modelling. All the other tools being used to assess demand are either industry standard models or have been explained in detail to the applicants. We have not been provided with more than the broadest outline of the fares model and have not been given information about the model parameters or the level of spatial disaggregation within the catchment areas in Scotland, North East England and the London area. We have been told that it is a binomial air/rail choice model and this causes concern that it may not be adequate to assess market impacts where the air carriers serve multiple airports in the London area with differing levels of frequency, fare and on-board service; and where, in future, there may be 2 rail operators with differences in journey time, frequency and on-board product.

We understand that First Group may have commercial concerns about releasing details of the model but it is clearly unfair, unreasonable and contrary to the principles of natural justice for ORR to rely on an applicant's model (albeit with some minor modifications) without sharing it with competing applicants. We note particularly that ORR has never relied on work undertaken for Grand Central and Alliance in determining previous applications and we find it most surprising that it is relying on an applicant's own model now, particularly when the application is so contentious.



The reporting of the air/rail fares model is not consistent with the statement on page 4-16 of the report that "we have worked collaboratively with ORR and with stakeholders so that our assumptions and methodology are clear, and to allow for rigorous challenge of our work".

Our concerns about the modelling of air/rail fares competition are further strengthened by the fact that journey time and fare competition have been modelled using different methodologies. In principle, a given reduction in rail Generalised Cost (money cost plus time-related factors) should have the same effect whether it is achieved through shorter journey time or lower fares. While we believe that the approach to modelling journey time reductions is less than ideal it does have the benefit of being consistent with international experience as described in PDFH. We do not know whether applying journey time reductions in the mode choice model would produce results that are at all consistent with the market share curve in PDFH and therefore with the journey time assessment. If not, this would mean that fares are not being assessed on a comparable basis.

In the fares module described in Appendix C, CH2M rightly exclude certain market segments from using the First Group Edinburgh service (First Class and 79% of Full Fare Standard Class). It is not made clear what, if any similar exclusions were applied to the air/rail fares module. In our view, it is questionable whether sitting in a high density single class train, with a very high average load factor, for over 4 hours would be acceptable to many business passengers irrespective of the relative generalised cost. Quality factors do not appear to be included in the mode choice model and are significant given the majority of air passengers on both the Edinburgh and Newcastle to London flows are travelling on business. This should be addressed by excluding the relevant air market segments from the model or by incorporating quality of service in the model.

It is also clear that quality factors are a very important part of Scotland's consideration for its services (as indeed they are for the DfT and passengers), and it is doubtful whether the First Group 'rack them and stack them' philosophy is appropriate on such a long and important route.



CH2M has not assessed competitive response by the airlines. We would expect this to occur, at least in the short term, as the low cost carriers seek to prevent First Group and Alliance developing a viable business. It should be noted that the Scottish Government is due to obtain powers over Air Passenger Duty in 2018 and is committed to halving it by 2020 and eventually abolishing it. This would permit air carriers to reduce fares with no impact on their revenues, by the time the proposed service starts operation.

We are also concerned with the modelling of fares in Alliance's Edinburgh application. Alliance has always argued that its high quality, very fast, service should command a fare premium relative to VTEC. However our revenue forecasts do not assume this because we recognise that VTEC would respond by reducing its fares so Alliance's yield might be similar to the current VTEC yield. This means that VTEC's fares would be significantly lower than today. This would result in user benefits and in a reduction in abstraction from VTEC. Neither of these is incorporated in the forecasts. Furthermore, CH2M argue (Section 3.4.1.4) that in the IEP Base scenario load factors on VTEC's Edinburgh services would be similar to today in 2020 and this would constrain VTEC from increasing the number of VTEC Advance tickets at low fares.

The entry of Alliance would increase seating capacity by around 65% from Edinburgh and 50% from Newcastle (compared to today's service) and create additional spare seats (even allowing for generated demand). Even in the absence of competition, this capacity increase would allow more cheaper advance tickets to be offered. This should be incorporated in the forecasts. We also note that competitive response by VTEC has been included in the assessment of other open access applications, but not the Alliance Edinburgh application.

Price is even more significant in the sensitivity test where the Alliance service is assumed to operate in non-tilt mode. In this scenario, Alliance would lose most of its journey time advantage relative to VTEC and would need to compete more strongly on price. It is unrealistic that this has not been included in the modelling.

Gravity Model

We consider that the gravity model is a useful tool for assessing the benefits of improved connectivity to London from stations without an existing frequent through service. However we believe that a comparison of results from the "radial catchment"



version of the model and the current preferred version would increase confidence in this aspect of the modelling.

We have a specific concern about the way in which competition between Grand Central at Eaglescliffe and VTEC at Middlesbrough has been modelled. Given their close proximity, it is unrealistic to seek to define separate catchment areas, especially as they are served by different services. CH2M has assumed that "of the additional journeys forecast, the level of abstraction is equivalent to Weekday Eaglescliffe - London journeys scaled by the proportion of the "inner" population of Eaglescliffe residing within our defined "inner" catchment for Middlesbrough, and then in proportion to the number of direct opportunities to travel per day." This assumes that Eaglescliffe draws its patronage from within a 15 minute drive time of the station, when in reality the catchment area is much larger, extending across Middlesbrough and Redcar. Accordingly the level of abstraction from Eaglescliffe has been significantly under-estimated.

MOIRA

MOIRA is clearly a valuable tool for assessing the Generalised Journey Time impacts of the various applications. However it is important to recognise its limitations in current market conditions. It was designed as a planning tool by BR in an era when it was a monopoly operator, with a standardised service offer and when advance fares were relatively uncommon. In these circumstances, flighting of trains to the same destination would be inefficient and would result in most demand being captured by the first train in the flight. This is not the case where competing operators have dedicated tickets and differing standards of service. In these circumstances passengers are much more likely to choose their preferred price/quality combination than to simply board the first train (and pay higher inter-available fares). This means that MOIRA will overstate abstraction for Alliance's Edinburgh service, which is assumed to be flighted in front of VTEC for operational efficiency, although this could change through the timetable development process.

Conversely abstraction will be understated for the First Group Edinburgh application, where services are either assumed to be overtaken or to follow a VTEC service. In reality, the suggested overtaking manoeuvre is inefficient and unlikely to be needed so would probably be eliminated through the timetable development process.



Economic Appraisal

In general, we are happy with the approach to economic appraisal, although it is important to recognise that wider economic and regeneration benefits are not included. These could be significant for some services, particularly the Cleethorpes route which serves Scunthorpe, currently suffering from the decline in the steel industry.

In addition, the following points are relevant:

- We cannot accept that an average load factor of over 80% is achievable on First's Edinburgh service given daily and seasonal variations in demand. This assumption will over-estimate the benefits of this option or at least increase the risk associated with them.
- CH2M refers to the costs of Kirkstall Forge and East Leeds Parkway being excluded from the appraisal. Kirkstall Forge is under construction and will open later in 2016 so will not be a cost to Alliance other than through station access charges. East Leeds Parkway would create significant benefits for other operators and would also potentially address capacity issues at Micklefield Junction with valuable operational and passenger benefits. These additional benefits should be considered by ORR alongside the costs.
- We are surprised that ORR did not ask CH2M to undertake an economic appraisal of the Bradford extensions to the VTEC Core (Option 5). We note that the Present Value of Costs of VTEC Core plus Lincoln/ Harrogate extensions plus Middlesbrough services equals the cost of the VTEC Full option, implying the Bradford service could be operated at zero cost. This does not appear logical.
- CH2M assume, in Appendix G, that 12 unit diagrams would be required to operate the Alliance Edinburgh service (excluding maintenance spares). The actual requirement is for 9 diagrams operating in tilt mode.
- First Group is proposing to use a 400 seat 5 coach train on the service, offering 1.45m seats (assuming 5 trains a day). Only a small proportion of traffic is expected between Edinburgh and Morpeth/Newcastle and yet First Group state they expect 1.6m passenger journeys a year¹. This indicates an occupancy rate well in excess of 80%.
- Marketing is going to be a key factor, and yet is not modelled. Alliance is
 offering a record breaking journey time to Scotland with a high quality on-board

¹ Tim O'Toole introduction – Hearing 12 June 2015



offer and competitive fares, and it is unrealistic to believe that such a service will not benefit from significant publicity let alone marketing.

2. Detailed Report Comments

The table below comments on points of detail in the report. Issues considered above are not repeated in the table.

Page	Section	Comment	
Main Report			
3-2	3.2.1	Table 2 shows an IEP Base London – Leeds time of 2 hours 7 minutes. In Table 5 on page 3-9 it is 2 hours 8 minutes. Which is correct?	
3-12	3.5.1.2	The proposed service pattern with services overtaken on route is inefficient and unlikely to be taken forward through the industry timetable planning process. A more efficient solution would be to flight these services (which make 2 intermediate stops) in front of the VTEC fast services (which make 4 stops). As noted above this would have MOIRA impacts.	
6-29	6.1.2.1	CH2M note that there is a loss of industry revenue for some flows, especially with the VTEC options and state that they report "the steps we have taken to address it" in the following section. We cannot find this explanation.	
6-29	6.1.2.6	CH2M note that the non-user benefits for Option 2 are lower than previously but do not clearly explain why.	
6-34	6.3.2	Table 13 shows abstraction from Grand Central at Sunderland. As Grand Central and Alliance are both Arriva companies this should not be considered as abstraction for the purposes of the NPA test. This also applies to Bradford in Table 10.	
6-34	6.3.2	Table 13 shows a very high level of abstraction at Edinburgh. Given that total current revenue from MOIRA is £61.7 million could CH2M please explain.	
6-37	6.4.2	The levels of abstraction from Cross Country, Grand Central and Hull Trains are higher in the VTEC Core than in the VTEC Full option. This does not appear logical given the greater quantum of services in the latter, please explain.	



C 40	0.50	Ma de met underetend why this setion more este or the	
6-40	6.5.2	We do not understand why this option generates crowding	
		benefits relative to the VTEC Core, when some Leeds – London	
		services are reduced in length. Please explain.	
Appendices			
B 5 to 6	B 3.1 to	There appears to be loose wording in several of these options	
	3.4	stating "cut all services North West of Leeds that exceed the	
		current quantum back to Leeds". This is correct for the VTEC	
		Core and Middlesbrough options (assuming North West covers	
		both the Harrogate and Bradford routes). However the reference	
		should only be to the Bradford route in the Lincoln/Harrogate	
		option. There is no reference to the Harrogate service not	
		operating in the Bradford option. Please review.	
C 2	C 2.2	Was the revenue share reallocation undertaken for all market	
		segments together before applying different elasticities to each	
		market segment to estimate market growth?	
C3	C 2.4	Is the statement "the above approach therefore assumes all but	
		advanced purchase passengers are willing or able to significantly	
		alter their travel time and/or product choice to take advantage of	
		cheaper fares" correct? This appears inconsistent with the text	
		above which implies only Advance fare payers have this	
		flexibility. Please explain.	
C4	C 2.4.1	Please could the rationale for the formula to calculate the new	
		VTEC fare be explained?	
D 4	D 3.1	At the bottom of the page there is a reference to Figure 1. We	
		cannot find this Figure. Should the reference be to Figure 2 on	
		page D 7?	
	1		

3. Further comments

While much focus has been on Edinburgh, it is important to not overlook the very substantial benefits that would arise from some new services to North Lincolnshire and West Yorkshire.

Alliance services were applied for nearly two years ago in early 2014 (Edinburgh February 2014 – North Lincolnshire and West Yorkshire April 2014). The franchise was let late in 2014, and First Group did not apply for capacity until spring 2015,



being given a significant commercial advantage in preparing a timetable that 'worked' with the VTEC timetable. We have had correspondence with the ORR on this issue. but in light of the incompatible comments from the ORR and VTEC on the provision of this timetable, the matter² remains unresolved.

However, what is clear is that the provision of the VTEC core timetable³ of 6 paths per hour, and the introduction of the Alliance North Lincolnshire/West Yorkshire services are wholly compatible within an 8 paths per hour timetable, and it has been that issue that has been overlooked by the unfair provision of the VTEC timetable to First Group. As can even be seen by the CH2M work, the projections of revenue for First Group from a service, 'not overtaken' shows abstraction increase by over 240% and generation decrease.

In absolute terms (before the correction of fare anomalies to Alliance's Edinburgh application by CH2M), Alliance's Edinburgh service, at £54.7 million will generate more than twice the total revenue of First Group for its service (as applied for) of only £24.7 million.

Alliance is also aware that any decisions must be based on an understanding of the capacity position, a situation that Network Rail is examining and due to brief the industry on, on 24th February. Initial discussion with Network Rail has indicated that capacity for electric traction has reached its limit between York and Newcastle. If confirmed by Network Rail's report, such a position would have a significant impact on all applications for - and the ORR's decision on - rights for services north of York. All the applications made to the ORR are for services that will be electric-hauled whilst running on the ECML.

We also note that since the assessment of capacity by Network Rail that First Group has proposed an additional hourly service between York and Edinburgh as part of the new TransPennine Franchise. According to First TPE it will use new build 125 mph traction on the ECML, which we can only assume is electric.

In addition the DfT, in its recent consultation on the Hendy Review, has cast doubt on whether the Secretary of State would still undertake the capacity improvements on

² As outlined in our letter to the ORR of 7 August 2015

³ Delivery of the VTEC core timetable does not impact on SoSRA, and is in line with all previous DfT outputs at industry meetings about the requirement of 6 LDHS paths for the franchise.



the ECML should the ORR approve an open access application. The ORR has sought clarification of the DfT comments on this matter, and Alliance will be responding separately on this issue.

ECML applicants are next due to meet at the ORR on 4 March 2016, but Alliance has been very keen to understand the on-going infrastructure position in light of continuing uncertainty from Network Rail, particularly about power supply issues on the ECML between Bawtry, south of Doncaster and Edinburgh. As you will be aware, this is potentially very important for all access applications, and we have been waiting for some time for Network Rail to produce its report on the subject.

Given the implications for all applicants for additional rights on the ECML I believe it is vital that the ORR reviews the report as soon as possible, although we understand the ORR may not yet have a copy.

This position validates the Alliance stance on its infrastructure requirement for tilt, as we have been clear that we would be unwilling to invest significant sums until such time as Network Rail was clear on the power supply position. That position now looks likely to limit the ability of the infrastructure to accept more electric trains in the medium term, with further pressure now brought to bear by the recent TPE award.

Alliance intends to introduce dual mode trains on its North Lincolnshire/West Yorkshire services, which would overcome any electric capacity issues. These services would use the same hourly path as the new proposed VTEC (also 2 hourly) service along the Micklefield corridor.

Unlike the tilt requirement for the ECML, Alliance's infrastructure plans for the Micklefield corridor include provision of funding for a new or re-sited station, which, depending on Network Rail's consideration of its location will help create the capacity for the delivery of the proposed services. A significant sum for this investment is included within the Business Plan for this service which has been submitted to the ORR, and is based upon the varying options developed by Network Rail for a re-sited station at Micklefield.

It is also worth noting that the Alliance North Lincolnshire/West Yorkshire services will deliver new direct services to London for seven new locations, Cleethorpes, Grimsby, Scunthorpe, Micklefield (East Leeds/Wetherby area), Kirkstall Forge (Leeds/Bradford



Airport), Guiseley and Ilkley, which also generate more than the First Group Edinburgh service proposal.

According to CH2M's report, this option, alongside the VTEC core, provides the highest total NPV, and the abstraction of both VTEC and Alliance is broadly similar. More importantly, there is significant evidence to support the introduction of this 'traditional' type of open access service providing, as it does, a significant economic benefit to a number of locations.

Systra review

It appears that Systra has done a fairly reasonable review of CH2M's modeling, giving a reasonable level of confidence that there are no remaining glaring calculation errors.

But that doesn't necessarily mean that the methodology adopted replicates the way that people will behave in the real world. Systra rightly and helpfully point out that the exact coding in MOIRA can have a big impact on abstraction. However it appears that Systra has not addressed the major concerns about the modeling of fares. This is not surprising in the non-air model, since Systra are the authors of the current methodology. In relation to air fares modeling for the First Group application they seem to have seen more information than ourselves, but not all of it.

One significant point relates to the gravity model. In Section 3.6.2 they say that the original version (based on 5 and 10 km radius catchments) could lead to illogical results but they don't explain why or under what circumstances. We note that Systra has not been given access to the source data, which was used estimate the catchment area isochrones, used to develop the revised model.

Alliance has contacted the ORR to seek clarification, but given this, how can they be confident that the results it produces are robust, especially given that it has a poorer goodness of fit than the radial catchment model?

Hopefully a number of the issues raised will be addressed before, or at, the next meeting scheduled for 4th March, and it is hoped that a clearer picture on the capacity position will also be known at that time.



Yours sincerely

Ian Yeowart