Michael Lee
Director, Railway Planning and Performance
Office of Rail Regulation
One Kemble Street
London
WC2B 4AN

Robin Gisby
Director, Operations & Customer Services

Kings Place, 90 York Way,
London N1 9AG
T 020 3356 9170
F 020 3356 9113
E robin.gisby@networkrail.co.uk

26 July 2010

Dear Michael

RE: Possible breach of condition 1 and 2 of Network Rail's network licence with regard to the introduction of the Integrated Train Planning System (ITPS)

Thank you for your letter of 12 July 2010.

We note the comments made in your letter that at this point ORR considers that Network Rail has failed, or is failing to meet, one or more of our network licence obligations in relation to the development and implementation of ITPS.

We are clearly very disappointed by the position that has been reached but we welcome your recognition of the complexity of the challenge that Network Rail has embarked upon. We believe that ITPS, once fully implemented, will fundamentally transform train planning in Great Britain and will provide both our customers and Network Rail with a single, efficient process for the timely and accurate planning of a high quality, easily published timetable that will meet the needs of all stakeholders. Network Rail has made a huge effort to make the development and implementation of ITPS an industry success story and whilst it is apparent that the system continues to suffer from a number of problems, we remain confident that introducing ITPS in time for the May 2010 timetable change was the right thing to do.

It is worth reminding ourselves that the timetable that is running today was developed exclusively in ITPS as were the STP amendments. PPM has remained stable throughout its introduction. The system, despite its teething problems, is capable of delivering a timetable that can support high levels of performance.

However, we are not complacent and we are doing everything possible to resolve the outstanding issues with ITPS as soon as is practically possible and we have a sound, credible and fully resourced plan to achieve this. Indeed the appropriateness of this plan has been confirmed by the independent reporter. We have dealt with the issues as they have

arisen openly and honestly and we have endeavoured to keep our customers and wider industry stakeholders fully appraised of the actions being taken throughout.

Before we respond to the substantive comments that you have raised in your letter with regard to the identification of possible breaches it is perhaps helpful to explain the rationale behind the decision to move to a new train planning system. We also provide an overview of the process that Network Rail went through in terms of developing this new system.

In summary, however, we acknowledge that there have been difficulties with this project and we regret that this has caused problems for some customers. We therefore acknowledge that we are currently in breach of Condition 2 of our network licence but given the wider context we do not believe that a breach of Condition 1.23 has occurred.

Background and context

The need to develop a new train planning system was identified in 2005. At this time there were approximately 370 train planning staff within Network Rail (and we estimate a broadly similar number across our customers' organisations), using seven overlapping and problematic planning systems to develop the timetable and produce capacity plans. The legacy systems that ITPS has replaced were both disparate and inefficient, evidenced by the fact that the same common data sets needed to be maintained across a number of databases. This point has been recognised by the independent reporter who has stated that the legacy Train Service Database (TSDB) was 'becoming increasingly difficult to maintain and was an ongoing constraint in future planning developments.'

The problems with the legacy train planning systems can be summarised as follows:

- Key planning data was held in multiple databases, requiring substantial maintenance to keep the systems synchronised.
- Train planning relied heavily on people with detailed knowledge of the network and services, with little 'intelligent' input from the system.
- When undertaking timetable re-casts there was little or no opportunity for comparing options or undertaking substantive performance or capacity analysis of the output.
- Possession plans did not feed into the legacy train planning systems meaning that train planners were required to rely on manual processes to avoid planning trains through possessions. This was a regular cause of operational disruption as errors frequently occurred in the plan.
- There was no automated conflict detection to prevent one train service being planned into the same path as another.
- Crucially, the legacy system provided no coherent baseline from which future enhancement or innovation could be built.

Furthermore, the old legacy systems presented very limited opportunities to automate system interfaces and improve effective collaboration in the rail industry. We would contend that some of the criticisms that Network Rail has received in relation to its management of significant timetable developments such as the East and West Coast Main Line re-casts, can, at least in part, be attributed to our former reliance on inefficient train planning systems.

In short, the legacy systems were old, expensive to maintain, cumbersome to use and prone to error – and the development of accurate and timely timetables, models and capacity plans was totally dependent on these rather antiquated tools. The decision was therefore taken to develop an integrated train planning tool-set which would provide an environment capable of bringing together both the end to end process for train planning and the data that is used to do this. Reform of the legacy train planning systems was therefore an essential enabler in terms of:

- Creating timetables that make better use of the capability of our infrastructure and equipment.
- Streamlining the wider industry planning processes for the overall allocation of network capacity.
- Allowing performance simulation and modelling (now a legitimate industry expectation for all significant timetable changes) on more occasions, more quickly and with reduced transaction costs.
- Creating more efficient industry processes in term of both the development and performance of the timetable.
- Meeting the longer term objective of facilitating improvements to the integration and collaboration of GB rail industry planning timescales.

The brief for ITPS was in itself fairly straightforward in that we set out to develop a train planning system that would deliver:

- Flexible and responsive tools and information which would enable train planners to undertake the full end to end range of planning and analysis tasks within one harmonised and integrated IT system.
- A single validated source of information to our Operational Planning Team.
- Improved modelling and analysis expertise.
- The removal of unnecessary and inefficient administrative tasks.
- The provision of performance feedback measures.
- Reduced cycle times for timetable development and increased discipline across the industry.
- A reduction in the overall complexity of producing industry timetables.
- Reduced ongoing operational and support costs.

However, this brief does little to explain the sheer scale of the challenge that Network Rail was presented with in terms of reforming the legacy industry planning systems. The ITPS programme was larger and more ambitious than anything previously attempted in this area. Prior developments had only tackled individual systems as opposed to the whole end to end industry process. It should be noted that ITPS has to interface with (at least) 170 other external systems owned and operated by our customers.

As has already been stated by the independent reporter, in understanding the scope of ITPS it is important to be clear on the full scope of the programme. ITPS was intended to replace or enhance much more than just the core train planning software. At its centre is a Train Planning System which is a replacement for Trainplan – the legacy train planning tool. ITPS also addresses the other key train planning systems, particularly the TSDB which was the main central repository of plans and data. This in turn supplied data, via the industry standard Common Interface File (CIF) to many downstream systems such as TRUST, TOPS and ARS as well as CIS, reservation systems and NRES applications. From its outset ITPS was designed to be a major and necessary modernisation of the whole train planning architecture for railway industry. Thus it was inevitable that the roll-out and implementation of ITPS might be expected to have an industry wide impact.

The implementation of ITPS

The ITPS project was formally initiated by Network Rail in 2006 when we set about the task of providing a modern and flexible framework for the more effective and efficient production of timetables in the future.

A competitive tender was held to identify potential system suppliers and, in February 2006, CapGemini and Selex were short-listed as potential prime suppliers for the programme. Both suppliers were then invited to put forward their proposals in relation to a number of activities including the production of a Programme Strategy Blueprint, technical functionality specifications, proposals for supplier partnering and cost.

In order to assess these two bids a detailed weighted evaluation scorecard was prepared and the evaluation panel reached an agreed score for the two suppliers. A three month collaboration phase was held with each supplier in parallel. The percentage scores at the first evaluation meeting, which was held following review of the final submissions and presentations by both suppliers, was CapGemini 56.2 per cent and Selex 60.5 per cent. Further clarification was then sought from the two short-listed suppliers and after considering the additional submissions and clarifications the scores were to adjusted to CapGemini 63.8 per cent and Selex 71.2 per cent.

Network Rail subsequently entered into an agreement with Selex to deliver ITPS on 1 December 2006.

As has been stated by the independent reporter, Selex elected to use as the basis of its ITPS offering the Train Planning System which had been developed by the German company, Hacon. This product, which is well regarded by European railway operators, was first put into operation by the Danish State Railway (DSB) in 2002. In addition to the DSB, Banedanmark (the Danish railway infrastructure operator) and Trafikstyrelsen, the supervising authority, also work successfully with TPS in Denmark.

Thus, whilst we accept the independent reporter's observation that '[the Hacon] TPS had not previously been used for train planning in an environment of the complexity and scale of the UK's', we believe that it was more appropriate to start with a tried and tested Commercial Off The Shelf (COTS) package than being caught up in bespoke development. Thus, we do not necessarily accept the independent reporter's comment that the difficulties and risks inherent in applying a COTS package (which was only proven in a relatively simple small scale environment) were not fully appreciated by our project team. The fact that the system had been tried and tested, albeit in a simpler operating environment to that in GB, served to reinforce the fact that the system was capable of delivering the required outputs and thus increased our confidence that the roll-out of ITPS would be a success. It was, of course, acknowledged that some bespoke adaptation for use in the GB operating environment would be needed and the integrated programme team developed and implemented a plan to achieve this.

Within your letter you state that the independent reporter's report leads ORR to question whether aspects of the development and introduction of ITPS were undertaken in a manner consistent with running an efficient and effective process, according to best practice for establishing a timetable. Your letter goes on to state that in the opinion of the reporter 'in the light of the decision to limit the scope of the project (and in particular to rely on the CIF file as a boundary point), there was inadequate assessment at the outset of the implicit system interface risks.' You also highlight that ARUP questions whether there was adequate assessment and mitigation of risk in January 2010 when we took the go / no-go decision to proceed.

We would like to take this opportunity to deal with each of these comments in turn as well as responding to some of the other findings as set out in ARUP's final report. We are particularly concerned by ARUP's statement that the difficulty of implementing ITPS was complicated by key early strategic choices and assumptions. This view does not align with our opinion or that of our internal audit team which undertook audits of the development and implementation of ITPS in 2007 and 2009.

We first respond to some of the key findings as set out in ARUP's final report.

'The project was developed as a Network Rail systems project rather than an industry-wide undertaking of IT-enabled major change. The TOCs and FOCs were not closely engaged from the outset and the opportunity to harmonise information transfer standards and processes was not taken.'

As a starting point it should be noted that the decision to develop ITPS as a Network Rail systems project rather than as an industry-wide undertaking was a conscious decision that was discussed at every industry timetabling conference from 2006 onwards, at which all industry stakeholders were represented. We believe that ARUP's report fails to adequately recognise the difficulty in engaging the wider industry when implementing long-term strategic developments where our customers, in the main, have shorter-term incentives, linked to the length of their respective franchises.

Nevertheless, by mid-2007 we felt that all user requirements had been properly identified and mapped to the product that was to be delivered on completion of the project. Functional requirements that were not already included in the core TPS product were being achieved either through enhancement of the core product or added outside of the core product by the system integrator.

In its report on the management of the introduction of ITPS the independent reporter states that the interpretation of the CIF format and its use by system owners was subject to 'significant variation. We disagree with this comment. Whilst there have been a couple of instances where we have had issues with data extraction (i.e. South West Trains CIS), in the main CIF has been effective in transferring information between Network Rail and the downstream systems used by our customers. We believe that this vindicates the strategy to replicate the existing CIF rather than force change on the industry which would have taken many years as all downstream systems owners would need to modify their systems and working practices. We believe that our reliance on replicating CIF was a sound approach to mitigating the risk associated with transferring information between Network Rail and our customers.

'The time in which the system was expected to be developed and delivered appears to have been unrealistically ambitious for a project of such complexity and stakeholder diversity. Furthermore, no time was set aside in the deployment plan to allow for consolidation, following introduction to service, before embarking on further development.'

The original timescales that were set to develop and deliver ITPS were ambitious but at the time were considered to be challenging but deliverable. We do accept that one of the major reasons for the delay in implementation was the dependency on the Corporate Network

Model. With hindsight we accept that greater contingency should have been available to cover this.

It is worth noting that the first internal audit of the ITPS programme in 2007 stated that the project programme was well constructed. At this point the programme was forecast to be 12 weeks behind the contractual milestone dates at product release.

'The risks inherent in developing a 'commercial off the shelf' TPS which was proven only in a relatively straightforward environment (i.e. the Danish railway system) into an integrated TPS for use across the large and complex UK rail network were underestimated.'

We disagree with ARUP's assertion that the risks of using a commercial off the shelf (COTS) solution were underestimated. This is a fundamental difference of opinion. We believe that using a tried and tested system was much less risky than undertaking bespoke development. Whilst it is accepted that the TPS in use in Denmark is relatively straightforward when compared to the operating environment in Great Britain, the TPS system was quite capable of being 'up-scaled' so as to provide the necessary functionality for use in this country.

'The single largest risk, was that inherent in conducting a necessarily "big bang" go-live, affecting all train operators, in the absence of a comprehensive and representative test environment which included external dependencies (although it is recognised that this was precluded by the circumstances and by the approach adopted). This risk was not effectively recognised or managed.'

As ARUP notes in its final report, we agree that the project risk and the difficulties experienced during go-live could have been significantly mitigated had exhaustive testing been feasible. However, for the reasons that have already been discussed with ORR such exhaustive testing was simply not possible. We believe that replicating the CIF was (and remains) a sound approach to mitigating the risks associated with the delivery of the new system.

It is accepted that our request for user participation prior to go-live prompted very little take-up although we do not necessarily share the view that this poor response was as a result of anything that we had said previously. Nevertheless, the initial poor response was acknowledged by Network Rail such that we then took further steps so as to encourage greater participation from our industry partners.

The identified possible breaches of our network licence

Within your letter you identify two possible breaches of our network licence (specifically under conditions 1 and 2). We respond to each of the separate possible breaches under separate headings below:

Licence Condition 1.23

In accordance with Condition 1.23 of our network licence, Network Rail is obliged to:

(a) run an efficient and effective process, reflecting best practice, for establishing a timetable and any changes to it; and
(b) where necessary and appropriate, initiate change to relevant industry processes,

so as to enable persons providing railway services and other relevant persons to plan their businesses with a reasonable degree of assurance and to meet their obligations to railway users.

Whilst it is clear that the roll-out and implementation of ITPS has not been without its difficulties we are firmly of the opinion that rolling out ITPS in time for the May 2010 timetable change was the right thing to do.

As we have already stated, it is clear that the legacy train planning systems were no longer fit for purpose and many of our customers have been entirely supportive of the roll-out of ITPS. For example East Coast has specifically commented that train planning using the old legacy systems was 'probably a decade or so behind what should be achievable with the technology available in the world today'.

We believe that not to have implemented ITPS could in itself have brought about a situation whereby it could have been argued that continuing to use the old train planning systems meant that we were no longer running an efficient and effective process for establishing a timetable – and thus be in breach.

The assessment as to whether the roll-out of ITPS has represented best practice is subjective but Network Rail believes that it has taken all the steps that would have been expected of a best practice network operator in terms of both managing the implementation of the system and mitigating the effects of the teething problems that have been experienced.

In the past few weeks Network Rail has implemented a number of system and infrastructure developments such that ITPS is now beginning to operate more smoothly. For example, we

have already completed upgrades to 234 PC's in use for ITPS at Milton Keynes and Leeds and network bandwidth upgrades at Milton Keynes, Leeds and Birmingham.

We have also implemented a systems maintenance release, MR0, which provides functionality to allow parallel processing of EDI Bids and also supports the correct processing of cancellations. Performance improvements include correct functioning of the Static Data Cache, stopping duplicate cancellation records being created and fewer individual PC freezes.

Further system and infrastructure updates are scheduled to take place over the coming weeks. In particular the maintenance release, MR2, which is now in test and is planned to be implemented on 31 July, will provide the functionality to enable EDI bid processing and normal train planning to work together. This will obviate the need for segregated working. All known PC freezes will also be resolved.

In August and September two further releases will continue to add general performance improvements and functionality for NRT/WTT Extracts, Timetable Roll-Forward, Auto-Archiving and Comparison Reports. Prioritisation of enhanced functionality into future releases beyond MR3 is also being planned.

We are very aware that the implementation of ITPS has resulted in an increased workload for a number of our customers and we are absolutely committed to putting this right as soon as is practically possible.

We believe that it was both necessary and appropriate to initiate change to industry processes and that despite the teething problems that have been experienced we believe that we have continued to operate an effective process for establishing the timetable, albeit that the process is not yet operating as effectively as we would like. It should be noted that even through ITPS has caused a number of operational issues, train services have largely continued to operate as normal and PPM has not been impacted.

Thus, we do not believe that we have been or are in contravention of Condition 1.23 of our network licence with regard to the roll-out and implementation of ITPS.

Licence Condition 2

Since ITPS was implemented Network Rail has missed T-12 uploads for a number of our customers. We therefore accept that Network Rail is in breach of its obligation 'to provide holders of passenger licences with access to information about the relevant changes [to timetable information] not less than 12 weeks before the date on which such changes are to have effect.'

We further accept that Network Rail will continue to be in breach of Condition 2 until such a time as stability has been restored to the timetable bid and offer process and T-12 is consistently maintained for our customers. This represents an ongoing challenge for Network Rail as timetables are offered on a weekly basis. Thus compliance with T-12 obligations in one week for one train operator is not necessarily indicative of success – we need to maintain this compliance week after week for all train operators. We have established a sound, credible and fully resourced stabilisation plan for doing exactly this and the quality of this plan has been verified by the independent reporter.

As we have already stated, we acknowledge that the implementation of ITPS has been and, for some of our customers, continues to be a major inconvenience. We recognise that ITPS has had an impact on the ability of passengers to purchase tickets for travel 12 weeks in advance of the scheduled date of operation of train services. We further acknowledge that ORR has reported that it has seen more complaints about the implementation of ITPS than any other previous undertaking by Network Rail. We have carefully reviewed the feedback on the implementation of ITPS that our customers have provided to ORR and clearly this makes for difficult and uncomfortable reading. We have apologised to our customers for the disruption that the roll-out of ITPS has caused to their businesses and it is clear that the onus is now very much on Network Rail to resolve the outstanding system issues and return to full T-12 compliance as soon as reasonably practicable. We have done our utmost to keep our customers informed of progress in this regard.

At the time of writing we are now offering the timetable at T-14 (in preparedness for upload at T-12) for the majority of passenger train operators including Virgin Trains, East Coast, Arriva Trains Wales, First Great Western, London Midland and CrossCountry. With a small handful of exceptions we expect to return to normal Informed Traveller timescales by the end of July 2010. The latest version of our stabilisation plan is enclosed at **Appendix A** of this response and we would be very happy to provide ORR with weekly updates (or updates at any other such frequency as ORR may deem appropriate) in order to monitor our progress towards achieving T-12 compliance as soon as reasonably practicable.

The impact on customers

The impact that the implementation of ITPS has had on our customers more generally (aside from the Informed Traveller issue where we acknowledge that we are currently in breach) is also well understood. In addition to the correspondence that ORR has received (much of which has been copied to Network Rail), we have also received a number of letters from customers which indicate probable revenue loss, notably as a result of (a) the late publication of timetables and (b) errors in individual train schedules which have meant that some

services have erroneously been shown as not running. We intend to deal with claims for compensation in the usual way.

Since March 2010, when the operational difficulties with ITPS began to emerge, Network Rail has held weekly conference calls with our customers to keep them informed about our progress towards addressing the outstanding system issues. ITPS has also been on the agenda at both NTF and NTF-OG. We have also provided regular updates to Passenger Focus, the Department for Transport and ORR. Thus we believe that we have taken all reasonable steps to keep our customers and wider industry stakeholders informed about progress towards resolving the ITPS issues and returning to Informed Traveller compliance.

Lessons learnt

ARUP's report into the development and implementation of ITPS already sets out a number of lessons that can be taken from ITPS that may be applicable to future projects of a comparable nature. We have reviewed the identified lessons carefully and we will implement these lessons as appropriate and necessary.

In terms of our own identified lessons learnt, we have already presented some initial views to NTF and we will do this again when we have completed a more fundamental review. We are still in the process of formulating our conclusions but it is likely that our key conclusion will be around the rigour of the go / no go decision making process. We remain of the opinion that introducing ITPS for the May 2010 timetable change was the right thing to do but when implementing future system projects we will introduce much more detailed go / no go reviews in the same way as we have done for infrastructure projects. Some of the other lessons learnt are as follows:

- We recognise that for future system projects that have the potential to have an industry impact, we need to do more to make sure that our customers (at a senior as well as more operational level) fully understand the significance and importance of such projects.
- We also appreciate better that it can be difficult to engage with customers and stakeholders on projects which have extended life-cycles and we must do more to facilitate their involvement.
- We accept that effective communication between stakeholders is essential to the delivery of successful projects and we will do more in this regard moving forward.

Summary

Whilst Network Rail accepts that the development and roll-out of ITPS has not been without its difficulties we believe that even with the benefit of hindsight, implementing ITPS in time for

the May 2010 timetable change was the right thing to do, not just for Network Rail but for the wider railway industry.

Up until the introduction of ITPS, the processes used for train planning had been unchanged for many years, and with the restructuring of the industry in 1994 processes became several orders of magnitude more complicated. Furthermore, the old train planning process was hugely labour intensive, created sub-optimal timetables and was inefficient in terms of train-path utilisation.

Over the last few years, we have been building a new system for undertaking this activity using modern but proven train planning systems. The new ITPS will provide much better timetables, release capacity and require much less manpower to deliver our timetabling commitments, meaning that we can path more trains over our existing network. It will also form a modern foundation for future development whilst reducing cost and time for the delivery of emerging, innovative timetable solutions as the industry moves forward.

We recognise that the introduction of ITPS has caused inconvenience (and in some cases loss) to our customers and Network Rail regrets this. We accept that this should not be 'expected' or taken lightly and we are far from complacent in this regard, not least because the teething problems have had a direct impact on our customers. Nevertheless, it is perhaps inevitable that many issues might be expected to arise in the transition from the old way to the new way of timetabling. In part, this is due to the complexity of the timetabling world where ITPS has to accept information from upstream systems, ensure its validity and then once processed, communicate with (at least) 170 other downstream external systems owned and/or operated by our customers.

Despite these difficulties Condition 1.23 of our network licence obliges us, where necessary and appropriate, to initiate changes to relevant industry process. Condition 1.2 of our network licence also obliges Network Rail to secure the operation of the network in accordance with best practice. We believe that it can be implied that this creates an obligation not just to secure the short-term operation of the network but also to take longer-term strategic decisions that bring about fundamental reform to move the railway forward into the 21st century.

We believe that we have faced the delivery of these obligations head-on. Change to the old industry processes for train planning was both necessary and appropriate and over time this massive overhaul will allow the industry to run more efficient and effective process for establishing a timetable – arguably something that has not happened since the industry was restructured. In rolling out ITPS we have created a train planning system that will be capable of delivering the required outputs for the next generation.

We fundamentally believe that, on occasion, making short-term sacrifices to secure long-term efficiency, productivity and performance gains is worthwhile and it is for this reason that we believe that in rolling out ITPS we have complied with the general duty as set out in Condition 1.2 of our network licence and also with our obligations as set out under Condition 1.23 in particular. Hence we do not believe that a breach of Condition 1.23 has occurred.

In contrast, it is clear, that through better planning Network Rail should have been able to do more to mitigate the effects of the roll-out and implementation of ITPS on our customers and end-users, particularly in terms of compliance with Informed Traveller timescales. As you have acknowledged in your letter, Network Rail (and the train planners within individual train operating companies) have done a great deal to contain the impact that ITPS has had on our customers and end-users but we acknowledge that there are many examples of serious inconvenience to passengers. We also acknowledge that the roll-out of ITPS has contributed to a few difficult periods for charter operators and their customers. It is on this basis that we accept that that we are in breach of Condition 2 and will remain in breach until such a time as we return to T-12 compliance. As stated above, we believe that we have a sound, credible and fully resourced plan to address this matter as soon as possible and by the end of July 2010 we expect to be broadly compliant with our obligations as outlined under Condition 2.

We would be happy to meet with ORR to discuss any of the matters contained in this letter in more detail.

Yours sincerely

Robin Gisby
Director, Operations and Customer Services

Appendix A -T-12 High Level Recovery Plan

NetworkRail