



Department  
for Transport

Department for Transport

Website: [www.dft.gov.uk](http://www.dft.gov.uk)

Our Ref: F0015994

13 June 2018

Dr Paul Thornton  
(By email: request-481687-c8394f85@whatdotheyknow.com)

### **Freedom of Information Act Request – F0015994**

Dear Dr Thornton,

Thank you for your patience in awaiting this response from the Department for Transport ('The Department').

On 1 May 2018, you requested the following information:

*"Subject: Freedom of Information request - ETCS signalling, clever traffic management systems,*

*Dear Department for Transport,*

*I note the interview with Mr Simon Kirby, Chief Executive at HS2 Ltd published in Rail Engineer at this link in 2016:*

<https://www.railengineer.uk/2016/04/29/taking-hs2-to-completion/>

*Mr Kirby is reported as saying that "ETCS signalling, clever traffic management systems, trains which report their own faults to the depots in advance. These are the building blocks of the railway and they will have to be robust. So HS2 doesn't intend to be the first deployment for any of this technology. Although cutting edge, it must all have been used successfully somewhere else first to reduce risk."*

*Please provide the specification(s) for the proposed ETCS signalling and the traffic management system for HS2.*

*Please provide information held by DfT about the successful use of those systems elsewhere.*

*Please particularly provide the information held by DfT about any rail layout arrangement elsewhere in the world where very high speed trains converge from three lines onto one in close proximity to a through station. Please provide the information held by DfT about the signalling and traffic management systems for those layouts.”*

Your request has been considered under the Freedom of Information Act 2000 (FOI Act) and the Environmental Information Regulations 2004 (EIR).

In your request you asked three questions which will be addressed in turn. Please note that your three questions have been labelled 1-3 for your ease of reference.

### **Question 1**

*“Please provide the specification(s) for the proposed ETCS signalling and the traffic management system for HS2.”*

#### **Released documents**

Relevant to Question 1, please find attached the following document which has not been previously released by the Department:

1. *Crewe Hub – HS2 & ‘Digital Railway’ Proposals, slides – David Coles and Andrew Spiers (Network Rail), 28 March 2018.*

Also attached is the previously released Systra report:

2. *Operational Concept Study – Technical Note – HS2 Capacity and Reliability’ B120A001, B120/SC/EUR/635-11, (Systra) 22 October 2011.*

The names of the consultants and more junior staff in HS2 Ltd (equivalent to civil servants below senior civil servant grade) have been redacted from the document in reliance on the third party personal information exemption in Section 40(2)&(3) (Personal data) of the FOI Act. These individuals are not in a public facing roles and therefore have a reasonable expectation that their names will not be placed into the public domain. To do so would be unfair and would contravene current data protection legislation. Redactions of these staff names would also be made under Regulation 13 (Personal data) of the EIRs.

#### **Useful links**

Relevant to Question 1 we also provide links to the following documents which are already publically available, relating to the European Train Control System (ETCS) signalling and traffic management system:

3. *Pre-Qualification Technical summary – HS2-HS2-RR-SPE-000-000006, Rev PO6 – link to DfT website:*  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/610125/HS2\\_rolling\\_stock - Pre-Qualification Technical Summary.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/610125/HS2_rolling_stock_-_Pre-Qualification_Technical_Summary.pdf)

4. *The Technical Specification for Interoperability (TSI)* which the HS2 Programme will be adhering to. <https://www.gov.uk/government/publications/rail-interoperability-tsi-catalogue>

and

<http://www.era.europa.eu/core-activities/interoperability/pages/technicalspecifications.aspx>

5. The Rolling Stock procurement documents which are publicly available: <https://www.gov.uk/government/publications/hs2-rolling-stock-procurement>
6. GB On-board New Trains Subsystem Requirements Specification: <https://www.rssb.co.uk/Library/improving-industry-performance/etcs-onboard-new-trains-system-requirements-specification-issue-2-2.pdf>

#### **Public Interest Test (PIT) – decision not to release at current time**

As explained in our holding reply of 24 May 2018, a PIT has been required on two specific documents, relevant to Question 1. The full PIT is at **Annex B**. These two documents are the:

1. *'Train Technical Specification (TTS) revision P05 - HS2-HS2-RR-SPE-000-000007'* – author HS2 Ltd. referred to as **'TTS Doc 1'** in this response and PIT.
2. *Technical Specification Parameters Part 2: Design Life, Operations, Noise and Vibration HS2-HS2-RR-PPR-000-000028 P01, 7 November 2016* – author HS2 Ltd. Referred to as **'Parameters Doc 2'** in this response and PIT.

The following qualified exemptions under the FOI Act were considered in the PIT:

**Section 43(2) of the FOI Act** - The exemption under Sections 43(2) (prejudice to commercial interests), of the FOI Act applies to the two documents and on balance the PIT assessment was that both documents should not be released at this time. Whilst fully acknowledging the importance of transparency and accountability in spending public money, they are material to live procurements. Early or uncontrolled release would damage the open and fair competition and would damage the commercial interests of bidding parties, their suppliers and HS2 Ltd running the procurements.

**Section 22(1) of the FOI Act** - The exemption under Section 22(1) (information intended for future publication), of the FOI Act also applies to the TTS Doc 1 and the PIT assessment decided that on balance this document should not be disclosed at the current time. There is an intention to release the TTS Doc 1 following the publication of the ITT, anticipated in 2018, unless it has sensitivities with the train control systems procurement. The TTS Doc 1 is an integral document in the ongoing Rolling Stock procurement and is being used in the train control systems

procurement. The TTS may still change as the Rolling Stock ITT is finalised and the TTS will be published in a controlled manner.

The following qualified exceptions under the EIR were considered under the PIT and in its preparation:

**EIR Regulation 12(4)(d) not applicable** - Further analysis in preparing the PIT showed the TTS Doc 1 and Parameters Doc 2 can now reasonably be assumed not to be draft or unfinished documents. The exception under EIR, Regulation 12(4)(d) relating to material still in course of completion, or to unfinished documents which you were notified of on 24 May 2018 does not therefore apply. However, the TTS may be subject to change as the Rolling Stock ITT is being finalised and the train control systems procurement is in an early stage of development. Please see the Section 22 summary in the full PIT below.

**EIR regulation 12(5)(e)** - Similar to the exemption under Section 43(2) of the FOI Act (prejudice to commercial interests), EIR exception Regulation 12(5)(e) (confidentiality of commercial information) also applies to these two documents and was also subject to a PIT. I appreciate you were not informed of the relevance of EIR regulation 12(5)(e) on 24 May 2018, but the commercial nature of the documents within the procurement has emerged since then. The PIT considered the exception 12(5)(e) and assessed that on balance the two documents should not be disclosed at this time. As mentioned above, disclosing information contributes to the visibility of how HS2 Ltd spends public money. However a strong consideration was also the confidentiality of the deliberately restricted environment HS2 Ltd use to manage the procurement. Release of the documents at this time before the ITT is finalised and officially released in a controlled and fair manner to the Market would damage the procurements. The confidentiality is protecting a legitimate economic interest of HS2 Ltd to be able to bargain effectively and to treat the parties in the market equitably.

## **Question 2**

*“Please provide information held by DfT about the successful use of those systems elsewhere.”*

### **Released documents**

The Department holds the following four emails relevant to Question 2:

1. *Matthew Lodge (DfT) 19 Oct 2015, 15:23 Fw ETCS testing in Core to Rail MPG Thameslink Programme List.*
2. *Simon Blanchflower (Network Rail) – 18 Oct 2015, 13:29– Fwd ETCS testing core.*
3. *Farha Sheikh (DfT) – 3 Nov 2015, 13:51 – Re Thameslink reaches an important milestone.*
4. *DfT Official to DfT ‘Rail Exec All List’ (Now DfT Rail Group), 3 Nov 2015, 09:08 – Thameslink reaches an important milestone.*

The four emails listed above have the names of and direct contact details of more junior staff below senior civil servant or their Network Rail equivalent redacted under the exemption at Section 40(2)&(3) of the FOI Act. Redactions of these staff names would also be made under Regulation 13 of the EIRs.

5. A Copy of page 49 of the reference book *“High Speed in the Low Lands” about the Dutch HSL Zuid, published by Infrasppeed BV IN 2006*, is also attached which may be of interest to you.

### **Useful links**

On Question 2, links are provided the following relevant documents both of which are already in the public domain:

6. Press release - World-first for ATO on mainline railway, 20 March, 2018 15:46 GMT - Govia Thameslink Railway. <http://www.mynewsdesk.com/uk/govia-thameslink-railway/pressreleases/world-first-for-ato-on-mainline-railway-2453777>
7. Press-release – Global Rail Review, 23 March 2018: [https://www.globalrailwayreview.com/news/67562/ato-etcs-passenger-service/?utm\\_medium=email&utm\\_campaign=GRR%20-%20Newsletter%2013%202018%20-%20Members&utm\\_content=GRR%20-%20Newsletter%2013%202018%20-%20Members+CID\\_03389aca7613e1a7e96cc648eabaeaac&utm\\_source=Email%20marketing&utm\\_term=ATO%20has%20been%20operated%20with%20ETCS%20during%20passenger%20service%20for%20the%20first%20time](https://www.globalrailwayreview.com/news/67562/ato-etcs-passenger-service/?utm_medium=email&utm_campaign=GRR%20-%20Newsletter%2013%202018%20-%20Members&utm_content=GRR%20-%20Newsletter%2013%202018%20-%20Members+CID_03389aca7613e1a7e96cc648eabaeaac&utm_source=Email%20marketing&utm_term=ATO%20has%20been%20operated%20with%20ETCS%20during%20passenger%20service%20for%20the%20first%20time)

### **Question 3**

*“Please particularly provide the information held by DfT about any rail layout arrangement elsewhere in the world where very high speed trains converge from three lines onto one in close proximity to a through station. Please provide the information held by DfT about the signalling and traffic management systems for those layouts.”*

No information has been identified within the Department in response to Question 3. However, all levels of the ETCS, including Level 2 which is being specified for HS2, provide automatic train protection. (See: <https://www.rssb.co.uk/improving-industry-performance/ertms> ). This means the actual speed of all HS2 trains is continuously monitored and automatically enforced to match the speed allowed by the train control system at a particular location and at a particular point in time, depending on how the route for the train has been set. HS2’s train control system will comply with all relevant Technical Standards for Interoperability and will be subject to rigorous testing before passenger services are introduced, as would be expected in this sector.

### **Complaint procedure**

In your email of 24 May 2018 you make reference to a review. We respectfully request that you consider this full response and then, if you remain unhappy with the way the Department has handled your request, or with the decisions made in relation to your request, you may complain within two calendar months of the date of this letter by writing to the Department's FOI Advice Team at:

Zone D/04  
Ashdown House  
Sedlescombe Road North  
Hastings  
East Sussex TN37 7GA  
E-mail: FOI-Advice-Team-DFT@dft.gov.uk

Please send or copy any follow-up correspondence relating to this request to the FOI Advice Team to help ensure that it receives prompt attention. Please also remember to quote the reference number above in any future communications.

Please see attached at **Annex A** details of DfT's complaints procedure and your right to complain to the Information Commissioner.

Yours sincerely,

David Coles

*Deputy Director, Technical Strategy,  
High Speed & Major Rail Projects Group –  
Department for Transport  
Great Minster House  
33 Horseferry Road  
London SW1P 4DR*

## **Annex A**

### **Your right to complain to DfT and the Information Commissioner**

You have the right to complain within two calendar months of the date of this letter about the way in which your request for information was handled and/or about the decision not to disclose all or part of the information requested. In addition a complaint can be made that Department has not complied with its FOI publication scheme.

Your complaint will be acknowledged and you will be advised of a target date by which to expect a response. Initially your complaint will be re-considered by the official who dealt with your request for information. If, after careful consideration, that official decides that his/her decision was correct, your complaint will automatically be referred to a senior independent official who will conduct a further review. You will be advised of the outcome of your complaint and if a decision is taken to disclose information originally withheld this will be done as soon as possible.

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at:

Information Commissioner's Office  
Wycliffe House  
Water Lane  
Wilmslow  
Cheshire  
SK9 5AF

**Annex B: Public Interest Test (PIT) – FOI F0015994 - European Train Control System (ETCS) and traffic management, track layout**

<b>Relevant extract of the Exemption from Section 43(2) of the FOI Act</b>	
<i>Section 43 (2) of the FOI Act sets out Information is exempt information if its disclosure under this Act would, or would be likely to, prejudice the commercial interests of any person (including the public authority holding it).</i>	
<b>Public interest test factors for disclosure</b>	<b>Public interest test factors against disclosure</b>
<p><b><i>Openness and transparency, accountability for the spending of public money and promoting competition in procurement via transparency.</i></b></p> <p><u>TTS Doc 1</u></p> <p>Section 8 of the TTS Doc 1 covers ETCS and is the relevant part of the TTS which falls under the scope of Q1 of the FOI request. TTS Doc 1 follows on from and develops the material already publically available in the Pre-Qualification Technical Summary (PQTS) in more detail.</p> <p>Its release would help ensure transparency and accountability for the spending of public money.</p>	<p><b><i>Openness and transparency, accountability for the spending of public money and promoting competition in procurement via transparency.</i></b></p> <p><u>TTS Doc 1</u></p> <p>The information will be released to the Market in a controlled manner as part of the ongoing live procurement for Rolling Stock and the Train control systems procurement. The document is likely to be released as part of the Rolling Stock ITT unless it has sensitivities with the train control systems procurement. These procurements need to be fair and controlled, addressing competitors in an open equitable manner on a level playing field.</p> <p>To release the whole of TTS Doc 1 or even just Section 8, early would have negative implications to the fairness of these procurements. It would give manufacturers or their supply chains prior knowledge of the requirement before it is officially released in the Rolling Stock ITT</p>



	<p>and/or before it feeds into the Train control systems PQQ and ITT, potentially affecting the value for money HS2 Ltd can achieve for the tax payer.</p> <p>The release of the whole of TTS Doc 1 or Section 8 of it specifically, would result in parties within the market incurring unnecessary costs from relying on, or being influenced by the information in a premature release of TTS Doc 1.</p> <p>The release of the document would give details to the market of the ETCS signalling and traffic management systems and the decision making process for HS2 before HS2 Ltd can approach the train control systems market fairly through formally announced channels.</p> <p>The early release of information into the public domain, which is an integral part of these procurements also damages reputation and trust the market and wider public have in the procurement process.</p> <p>HS2 Ltd has stressed the following linked to the sensitive procurement process:</p> <ul style="list-style-type: none"> <li>• <i>“The procurement process for the construction of HS2 and ETCS signalling and traffic management system is underway. The disclosure of information would undermine HS2 Ltd’s ability to negotiate competitive rates because potential suppliers would adjust their bids accordingly. This would undermine the possibility of securing value for money for the taxpayer.</i></li> </ul>
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<p><b><i>Protection of the Public</i></b></p> <p>The train control system is a key element in ensuring HS2 can be operated safely.</p>	<ul style="list-style-type: none"> <li>• <i>Disclosure of this information would reveal details to the marketplace about HS2 Ltd's ETCS signalling and traffic management systems and decision making process. HS2 Ltd considers that disclosure would therefore undermine HS2 Ltd's ability to procure supplies on an even playing field. Such an outcome would undermine HS2 Ltd's capacity to negotiate future contracts and to get value for money.</i></li> <li>• <i>The disclosure of information related to ECTS (sic) signalling and management systems information would likely adversely affect incentives on suppliers to release efficiencies and reduce costs.</i></li> <li>• <i>Disclosure would also impact on any on-going or future negotiations that HS2 Ltd would enter into regarding similar circumstances."</i></li> <li>• <i>There is a strong public interest in ensuring HS2 Ltd is able to make robust decisions regarding its suppliers of goods and services including in relation to commercial contracts and ensuring value for money."</i></li> </ul> <p><b><i>Protection of the Public</i></b></p> <p>The majority of HS2's ETCS specification will be in accordance with European Technical Specifications for Interoperability (TSIs) which have been thoroughly tested and proven. The full TTS Doc 1 specification should be released well before the public is invited to use the service.</p>
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### Parameters Doc 2

The Parameters Doc 2 document sought endorsement of recommendations on the approach to specification of the Phase One Rolling Stock with respect to design life, operations and noise and vibration, which feeds into the train specification.

The endorsement of the recommendation enabled the completion of the technical documents which accompanied the Phase One Rolling Stock Pre-Qualification Questionnaire (PQQ) including the PQTS

### Parameters Doc 2

The above comments for TTS Doc 1 apply to Parameters Doc 2. The Parameters Doc 2 document covers issues which are still being worked through in the procurements for both rolling stock and train control systems.

Key elements of the ETCS specification are described in the rolling stock PQTS, which is already in the public domain and the Requester will be provided with a link to this.

### **PIT Decision on Section 43 (2) of the FOI Act**

Both the documents referred to above (TTS Doc 1 and Parameters Doc 2) include commercially sensitive information as described in the ICO FOI Act Section 43 Guidance (Clause 30). To ensure a 'level playing field' which promotes competition and achieves best value for money for the public, HS2 Ltd follows typical public procurement processes and carefully controls the release of any tender information so that it can be sure all tenderers receive the same information and do so at the same time. Release of some documents in an uncontrolled fashion (e.g. in response to an FOI or EIR request) would prejudice this as some tenderers might see it before others, or rely on a version of the document which subsequently changed. Either of these would be sufficient for one or more of the tenderers to instigate a legal challenge, thereby incurring significant additional expenditure for the taxpayer. Conversely, I believe the key elements of the ETCS specification which might be of public interest are provided already in the documents which are being released or referenced in response to this FOI request, before releasing either the TTS Doc 1 or Parameters Doc 2.

David Coles 6 June 2018

Relevant extract of the Exemption from Section 22 of the FOI Act	
<p><i>Section 22(1) of FOI Act</i>  <i>Information is exempt information if—</i>  <i>(a) the information is held by the public authority with a view to its publication, by the authority or any other person, at some future date (whether determined or not),</i>  <i>(b) the information was already held with a view to such publication at the time when the request for information was made, and</i>  <i>(c) it is reasonable in all the circumstances that the information should be withheld from disclosure until the date referred to in paragraph (a).</i></p>	
Public interest test factors for disclosure	Public interest test factors against disclosure
<p><b><i>Intention to publish</i></b></p> <p><u>TTS Doc 1</u></p> <p>TTS Doc 1 is likely to be released following publication of the Rolling Stock Invitation to Tender (ITT) which is currently anticipated in 2018, unless it also has sensitivities with train control systems procurement, in which case it will be released as part of that ITT, which is currently anticipated in 2019. A definitive publication date has not been set.</p> <p>Section 8 of the TTS Doc 1 is the most relevant part of the TTS which falls under the scope of this FOI request referring to ETCS</p>	<p><b><i>Intention to publish</i></b></p> <p><u>TTS Doc 1</u></p> <p>TTS Doc 1 is part of the Rolling Stock ITT and is being used in the separate train control systems procurement. The document has not yet been issued to the wider market and the public and it is an integral document in an ongoing live procurement process.</p> <p>Although not a draft document, the information in the TTS Doc 1 as a whole and Section 8 specifically may be subject to change as the Rolling Stock ITT is being finalised and the train control systems procurement is being developed. The document is due to be released by HS2 Ltd as part of the Rolling Stock ITT in a controlled manner. However its release</p>

<p>specification. It follows on from and develops the material already publically available in the Rolling Stock Pre-Qualification document.</p> <p>It may therefore be useful to the Requester.</p>	<p>before the train control systems ITT is issued may be problematic as this procurement is at an earlier stage of development. We should therefore not commit to its release immediately following the Rolling stock ITT issue.</p> <p>On 30 May 2018 HS2 Ltd provided the following comment on TTS Doc 1:</p> <p><i>“As discussed, we intend to publish the Train Technical Specification (HS2-HS2-RR-SPE-000-000007) on the internet following the release of the rolling stock invitation to tender (ITT). We cannot release the document prior to that because it relates to the on-going procurement process. The release of the ITT is planned for later this year. We are unable to confirm the date for ITT release at this stage.</i></p> <p>HS2 Ltd explained that</p> <p><i>“... it is also our intention to publish the TTS to the wider supply chain (via the HS2 website) such that they can consider our requirements and contact the rolling stock tier 1 contractors to offer support. At this point the TTS becomes publically available”.</i></p> <p>The intention to publish is linked to the overall procurement of rolling stock and infrastructure for HS2 and therefore that intention remains real. For projects as large and complex as HS2, the rolling stock and train control systems must be procured several years in advance of the planned opening date which, for Phase 1, is December 2026</p>
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**PIT Decision on Section 22 of the FOI Act**

Section 22(1) of the FOI Act provides an exemption for information that is intended to be published in the future providing that it has a 'settled expectation that the information will be published at some future date' (ICO Section 22 Guidance, Clause 5) even though the date for publication has not yet been set (ICO Section 22 Guidance, Clause 12). The full TTS Doc 1 specification is likely to be released before the contracts for rolling stock or train control systems are awarded and well before the public is invited to use HS2.

David Coles 6 June 2018

<b>Relevant extract of the exception from Regulation 12(5) (e) of EIR</b>	
<p>12.(5) For the purposes of paragraph (1)(a), a public authority may refuse to disclose information to the extent that its disclosure would adversely affect—</p> <p>(e) the confidentiality of commercial or industrial information where such confidentiality is provided by law to protect a legitimate economic interest</p>	
<b>Public interest test factors for disclosure</b>	<b>Public interest test factors against disclosure</b>
<p><u>TTS Doc 1</u></p> <p>The disclosure of information ensures transparency and holds public bodies to account. The rolling stock procurement is a significant tranche of public expenditure. There is a general public interest in disclosure to consider.</p> <p>HS2 Ltd is running the procurement and disclosing such information contributes to the visibility of how HS2 Ltd spends public money effectively and how their procurement is bringing value for money.</p>	<p><u>TTS Doc 1</u></p> <p>The issues raised against disclosure under section 43(2) of the FOI Act outlined above also apply to the exception applied under Regulation 12 (5) (e) above. However under this EIR regulation the following factors should also apply against disclosure of TTS Doc 1.</p> <p>The information is inherently commercial in the scope of this regulation, being about purchase of goods – trade. This is, as explained above an ongoing procurement.</p> <p>The Rolling Stock TSS confidentiality would be adversely affected by its disclosure as it is being developed by HS2 Ltd in a deliberately restricted confidential environment and the understanding by HS2 Ltd is that it will not be released prematurely to the wider market and placed in the public domain until the ITT is completed and released in a fair manner through</p>

<p><u>Parameters Doc 2</u></p> <p>The Parameters Doc 2 was also linked to the Rolling Stock PQQ which is in the public domain already.</p> <p>As explained for TTS Doc 1 above, the disclosure of information ensures transparency and holds public bodies to account. The rolling stock train control system procurements are significant tranches of public expenditure. There is a general public in disclosure to consider.</p> <p>HS2 Ltd is running the procurement and disclosing information contributes to the visibility of how HS2 Ltd spends public money effectively and how their procurement is bringing value for money.</p>	<p>the announced channels. The procurement follows established procurement processes with regard to confidentiality.</p> <p>The confidentiality is protecting a legitimate economic interest of HS2 Ltd to be able to bargain effectively in their procurement and future negotiations with the market. Its release at this time would give parties in the market commercially valuable information in an uncontrolled manner and before the ITT is finalised.</p> <p><u>Parameters Doc 2</u></p> <p>The above comments for TTS Doc 1 also apply to Parameters Doc 2. The Parameters Doc 2 document covers issues which are still be worked through in the procurements for both rolling stock and the train control systems.</p>
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PIT decision on Regulation 12(5) (e) of EIR

Both the documents referred to above (TTS Doc 1 and Parameters Doc 2) include confidential, commercial information, disclosure of which would adversely affect a legitimate economic interest, namely HS2 Ltd's procurement of the rolling stock and train control systems, and therefore an exception under Section 12(5)(e) of the EIR may apply. However, under ICO Guidance on this section (Clause 6), we can only withhold such information if the public interest in maintaining the exception outweighs the public interest in disclosing the information.

To ensure a 'level playing field' which promotes competition and achieves best value for money for the public, HS2 Ltd follows typical public procurement processes and carefully controls the release of any tender information so that it can be sure all tenderers receive the same information and do so at the same time. Release of some documents in an uncontrolled fashion (e.g. in response to an FOI or EIR request) would adversely affect this as some tenderers might see it before others, or rely on a version of the document which subsequently changed. Either of these would be sufficient for one or more of the tenderers to instigate a legal challenge, thereby incurring significant additional expenditure for the taxpayer. Conversely, I believe the key elements of the ETCS specification which might be of public interest are provided in the documents which are being released or referenced in response to this FOI request, without releasing either the TTS Doc 1 or Parameters Doc 2.

David Coles 6 June 2018