



# HS1 NEW OPERATOR GUIDE



**FEBRUARY 2013**

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## **1. Introduction**

HS1 Ltd has just celebrated the fifth anniversary of the full opening of the HS1 railway. International passenger services have been operating on HS1 since its opening and domestic high speed passenger services commenced in 2009. 2012 saw the first international freight services on HS1.

The journey time reductions brought about by HS1 and the world class level of reliability of our infrastructure have made a significant contribution to passenger growth for services operating on HS1.

HS1 has spare capacity to accommodate new international or domestic services and we are keen to work with and support new operators interested in running services on HS1.

This New Operator Guide has been developed to provide an introduction to HS1 and the steps that a prospective new train operator would need to take to obtain the approvals, authorisations and contracts necessary to operate services on HS1. We would be happy to discuss any prospective operator's plans and provide further information.

### **1.1. HS1 overview**

#### **1.1.1. HS1 infrastructure and connections**

HS1 is the 109 km high speed railway between London and the Channel Tunnel. It is the UK leg of the Paris-Brussels-Köln-Amsterdam-London (PBKAL) trans-European transport network priority project. HS1 is Britain's first high speed railway and was designed to be compliant with both UIC GC gauge and relevant European Technical Specifications for Interoperability (TSIs).

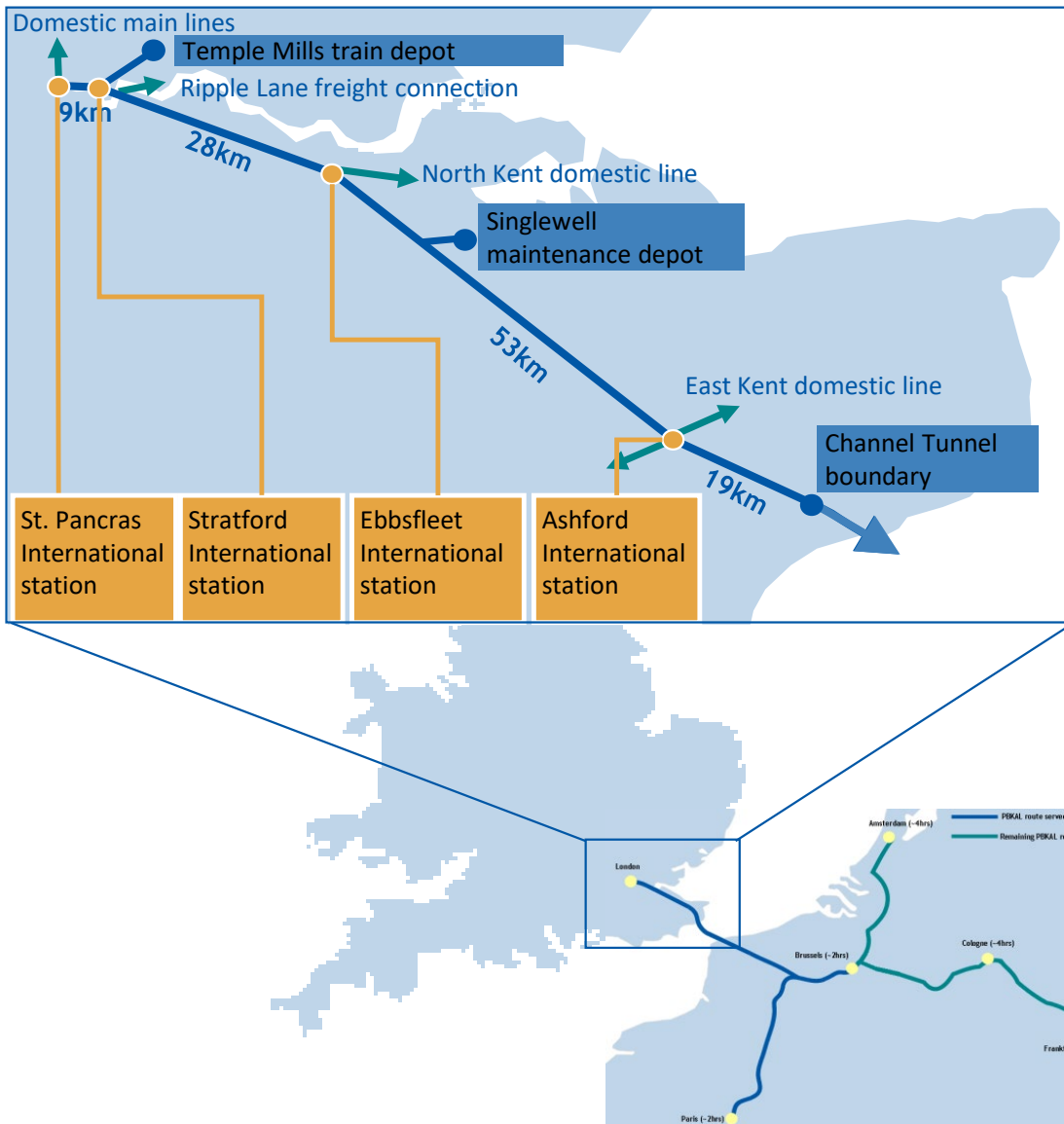
There are four international stations along the HS1 route, two in London and two in Kent. The London terminus of HS1 is the magnificently refurbished St Pancras International.

HS1 has a number of connections to the UK domestic network: at Ebbsfleet and Ashford allowing through services from north and east Kent, with domestic lines to the north of London and a freight connection at Ripple Lane. Following the success of HS1, the UK government is planning HS2, a high speed rail network linking London with cities in the Midlands and the north of England and intends to implement a direct link between HS2 and HS1<sup>1</sup>.

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<sup>1</sup> Department for Transport, January 2012, High Speed Rail: Investing in Britain's Future – Decisions and Next Steps <https://www.gov.uk/government/publications/high-speed-rail-investing-in-britains-future-decisions-and-next-steps>

**Figure 1: HS1 infrastructure and connections**



Since opening, HS1 Ltd has worked with train operators to manage the seamless transfer of Eurostar services to HS1 and the smooth introduction of Southeastern high speed domestic services on the line (which resulted in a three-fold increase in the number of trains operating on HS1). HS1 has operated at world class levels of reliability throughout, with a Moving Annual Average (MAA) of less than 9 seconds delay per train from infrastructure incidents as at 5 January 2013.

### 1.1.2. HS1 Ltd

HS1 Ltd holds the concession from the UK government to operate, manage and maintain the HS1 assets until December 2040. HS1 Ltd is jointly owned by Borealis Infrastructure (50%) and Ontario Teachers' Pension Plan (50%), two Canadian pension funds.

HS1 Ltd has been recognised for its achievements with an array of awards covering many different facets of the business including engineering and construction, architecture, planning, safety, environment and retail.

### 1.1.3. Current train services operating on HS1

#### International passenger services

Eurostar International Limited (EIL) is currently the only international passenger rail operator serving Great Britain. Eurostar services link St Pancras International, Ebbsfleet International and Ashford International with Paris, Brussels, Lille and Calais. There is also a daily service to Disneyland Paris and seasonal services to Avignon and the Alps. The fastest trains travel between London and Paris in 2 hours 16 minutes and between London and Brussels in 2 hours 1 minute.

EIL operates its service with Class 373 rolling stock and has ordered 10 new Siemens e320 train sets to supplement its fleet.

Eurostar passenger growth has been strong. Since 2007 there have been increases in passenger numbers every year despite the challenging economic environment: from 2007 to 2012 average passenger growth was 3.7% per annum. In 2012 Eurostar services carried 9.9 million passengers (8.3 million in 2007).

#### Domestic passenger services

Domestic passenger services on HS1 are operated by London & South Eastern Railway Limited (LSER) under a franchise let by the Department for Transport (DfT).

The full high speed domestic service commenced in December 2009 (branded Southeastern Highspeed) using a fleet of Hitachi Class 395 electric multiple units (EMUs) capable of speeds of 225km/h.

During the 2012 Olympic and Paralympic Games, HS1 Ltd worked with LSER and NR(HS) to provide the acclaimed “Javelin” shuttle service which operated on HS1 between St Pancras International and Stratford International, adjacent to the Olympic Park site. An additional

3,354 trains were operated over the 17 days of the Olympic Games: this more than doubled the domestic service compared with the normal level of 1,037 trains per week. The additional Olympic and Paralympic services were delivered with no significant impact on performance.

The domestic high speed service is predominantly a London commuter operation. Trains connect with the Network Rail domestic network to serve destinations in north Kent (via Ebbsfleet International) and east Kent (via Ashford International). At peak times, shuttle services also operate between Ebbsfleet International and St Pancras International.

HS1 has resulted in journey time savings of up to 50 minutes for London commuters from Kent. Journey times to St Pancras International are 17 minutes from Ebbsfleet International and 38 minutes from Ashford International. In 2012, 9 million passenger journeys were made on high speed domestic services.

*“The major triumph, though, has been the Javelin. Fast, frequent and very long, the trains into St Pancras have hoovered up the queues, delivering spectators faster than Usain Bolt. Not just spectators either. The other day the US Basketball team was spotted on the service. When asked why the richest sportsmen in the world were reduced to public transport, Kobe Bryant explained that ‘You can’t buy private transport this good’.”*  
Daily Telegraph 10 August 2012 writing about the London 2012 Olympic Games



### International freight services

Deutsche Bahn Schenker (DBS) currently operates a limited freight service between London and Poland. All movements on HS1 are at night, operate at a maximum speed of 140 km/h and use Class 92 locomotives. This conventional freight traffic is supported by the UK government through a levy on domestic franchised train operators which covers any shortfall in the recovery of costs arising from the freight charging arrangements. Eurotunnel's rail freight subsidiary, Europorte Channel, operated trial conventional freight trains on HS1 during 2012.

There is currently no high speed freight service on HS1. High speed freight would operate at up to 300 km/h and could run during normal service hours. In March 2012 Euro Carex operated a test high-speed freight train between Lyon St Exupéry airport and St. Pancras International Station.

## 1.2. Benefits of using HS1

### 1.2.1. Benefits of high speed rail

As a high speed rail connection between the UK and Europe, HS1 offers an attractive alternative to air travel. Compared with air travel, high speed rail:

- Provides seamless city centre to city centre journeys which are more productive for business travellers and more relaxing for leisure travellers;
- Provides good onward connections at city centre stations;
- Avoids airport stress and queues with easier and shorter check-in and no waiting for baggage reclaim; and
- Is more reliable.

### 1.2.2. Growth of high speed rail in Europe

The high speed rail network in Europe is growing with many new lines planned. Figure 2 shows the UIC map of European high speed rail lines in operation and under development<sup>2</sup>.

**Figure 2: European high speed rail network**

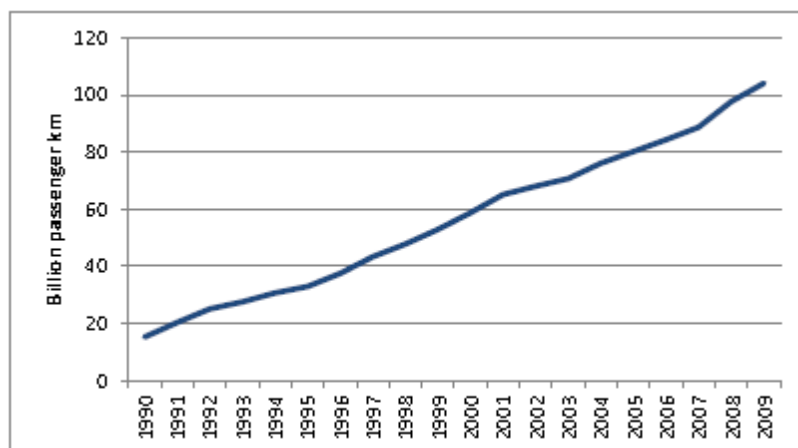


Source: UIC

Figure 3 shows the growth in European high speed rail usage since 1990<sup>3</sup>. Between 1990 and 2009 there was a 7-fold increase in high speed rail passenger-km in EU countries, equivalent to a compound annual growth rate of 10.6%.

In relation to the UK in particular, the introduction of Eurostar services has contributed to a significant

**Figure 3: European high speed rail usage**



Source: EU transport in figures, Statistical pocketbook 2012

<sup>2</sup> UIC High Speed World Maps <http://www.uic.org/spip.php?article2727>

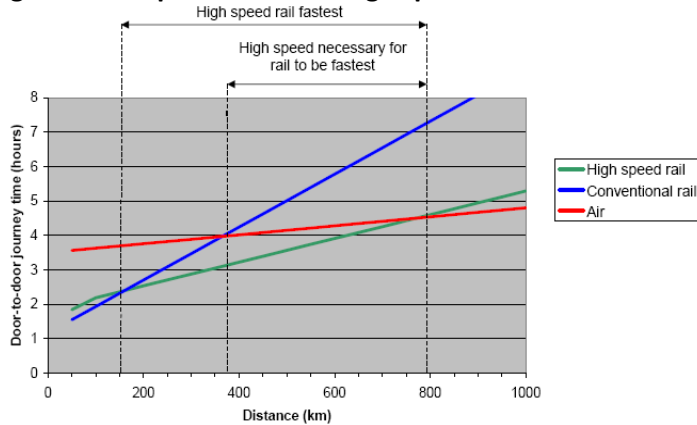
<sup>3</sup> EU transport in figures, Statistical pocketbook 2012 [http://ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2012\\_en.htm](http://ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2012_en.htm)



growth in the overall market for travel between London and Paris/Brussels. Since starting operations in November 1994, Eurostar has more than doubled the total number of passengers travelling (by air or rail) on these routes. Eurostar has 80% of the market share for travel between London and Paris and Brussels<sup>4</sup>.

### 1.2.3. Rail/air competition

**Figure 4: Competitiveness of high speed rail v air**



The main competitor for international high speed rail is air travel. Recent estimates have suggested high speed rail can be competitive on journeys of 4 hours (or even longer) and in a distance band of up to 800km (Figure 4).

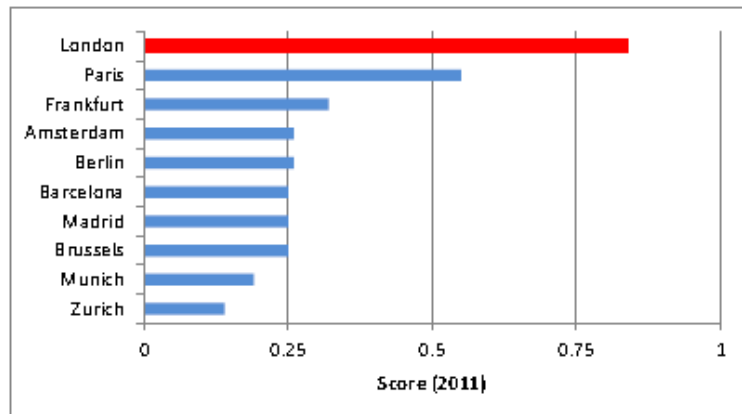
Source: High-Speed Rail Development Programme 2008/9: Strategic Choices, MVA Consultancy<sup>5</sup> - report for Greengauge 21

### 1.2.4. London: first city in Europe for business and tourism

London is the largest city in Western Europe with a population of over 8 million and is acknowledged as the financial capital of Europe.

In 2011 the European Cities Monitor<sup>6</sup> ranked London as the top European city in which to locate a business, the 22nd consecutive year in which London topped the ranking (Figure 5).

**Figure 5: Best cities in Europe to locate a business**



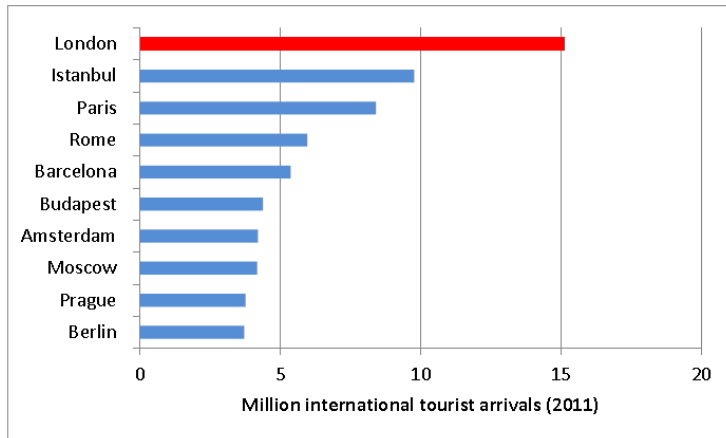
Source: European Cities Monitor 2011

<sup>4</sup> Source: Eurostar press release 31/01/2011 [http://www.eurostar.com/UK/uk/leisure/about\\_eurostar/press\\_release/press\\_archive\\_2011/20110131\\_eurostar\\_contributes\\_to\\_rail\\_renaissance.jsp](http://www.eurostar.com/UK/uk/leisure/about_eurostar/press_release/press_archive_2011/20110131_eurostar_contributes_to_rail_renaissance.jsp)

<sup>5</sup> <http://www.greengauge21.net/wp-content/uploads/PC-Workstream-2-Strategic-Choices.pdf>

<sup>6</sup> European Cities Monitor 2011, Cushman & Wakefield. The survey is based on interviews with senior executives from 501 European companies who gave their views on Europe's leading business cities. <http://www.cushwake.com/cwglobal/jsp/kcReportDetail.jsp?Country=GLOBAL&Language=EN&catId=100003&pId=c38200001p>

**Figure 6: Top 10 European cities for international tourist arrivals**



Source: Euromonitor International

London also receives top ranking as a city destination for international visitors. In 2011, London attracted 15.1 million international visitors giving it the number one ranking in Europe in Euromonitor International’s Top 100 City Destinations Ranking<sup>7</sup> which said “*London benefited from a wide mix of entertainment options and its position as Europe’s best connected city.*”

### 1.2.5. Environmental sustainability

High speed train travel is the sustainable alternative to flying. Recent research has shown that, per passenger-km, international rail travel produces only 15% of the greenhouse gas emissions of short haul air travel<sup>8</sup>.

HS1 was built to modern, high environmental standards which has been recognised in many national environmental and planning awards. In particular the following are of note:

- Over 60% of the route was built in transport corridors of existing railways and motorways with 25km of tunnels beneath London;
- To minimise its impact on sensitive landscapes the route is low in the landscape, with integral local landscaping which incorporates visual screening and noise bunds. The result is a landscaped route which also incorporates wildlife habitat creation and biodiversity. Over 1.2 million local provenance native trees were planted as part of landscape mitigation schemes; and
- Innovative track within the London Tunnels provides enhanced ground borne noise mitigation for properties above the London Tunnels.

Since the route has been opened our achievements have included:

- Over 10% reduction in carbon emissions at St Pancras International over the last 3 years, and over 15% reduction at Ebbsfleet International in the last year;
- Recycling rate of 80% at St Pancras International and highly commended in the Environmental Excellence in Camden Organisations (EECO) awards 2012;
- Reduction in use of landfill to the current level of 1% overall; and
- Award of Biodiversity Benchmark in 2012 for management of HS1 landscape infrastructure.

<sup>7</sup> <http://blog.euromonitor.com/2013/01/top-100-cities-destination-ranking.html#more>

<sup>8</sup> 2011 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting <http://archive.defra.gov.uk/environment/business/reporting/pdf/110707-guidelines-ghg-conversion-factors.pdf>

### 1.3. Stations and onward connections

HS1 has four stations:

- St Pancras International and Stratford International in London; and
- Ebbsfleet International and Ashford International in Kent, which serve much of south east England.

#### 1.3.1. St Pancras International<sup>9</sup>

St Pancras International is HS1's London terminus and is a major landmark in the capital. A Grade I listed building<sup>10</sup>, it was originally opened in 1868. It was refurbished to return the station to its former glory as part of the construction of HS1 and opened as an international terminal in 2007.



*St Pancras International station*

In 2012 St Pancras International won the Judges' Special Award at the National Rail Awards in recognition of ongoing excellence: the station was praised for setting new standards in the UK railway industry and commended for its continued dedication to customer experience.

The station has nine high speed platforms, six for international services and three for high speed domestic services, 90,000 square feet (8,400 square metres) of retail space and a 5 star hotel.

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<sup>9</sup> St Pancras International station website <http://stpancras.com/>

<sup>10</sup> Listed buildings are buildings of special architectural or historic interest. Grade I buildings are of exceptional interest.

## Connections

St Pancras International is one of the best connected stations in Europe. It is within a few minutes by underground or taxi of the City, London's major business and financial centre, and the tourist facilities of the West End.

King's Cross/St Pancras underground station is served by six underground lines and is one of London Underground's busiest stations, with 77 million users in 2011<sup>11</sup>.

St Pancras International has excellent connections to the mainline rail network for destinations north of London:

- Services to the East Midlands from St Pancras International;
- Services to the east and north east of England and Scotland from neighbouring King's Cross station; and
- Services to the West Midlands, north west England and Scotland from nearby Euston station.

A subsurface station on the Thameslink route sits beneath St Pancras International. Thameslink currently serves destinations between Bedford and Brighton including Gatwick and Luton airports: on completion of the Thameslink Programme in 2018 many more destinations in south east England will be served.

## Regeneration

The restoration of St Pancras International is seen as a catalyst for the regeneration of this area of London. Neighbouring King's Cross station is also being restored and expanded. The former railway land immediately to the north of the two stations is home to the King's Cross Central redevelopment<sup>12</sup> in which 8 million square feet (740,000 square metres) of mixed use space is being created with completion and occupation of new sites starting in 2012. Plans include:

- 23 new and refurbished office buildings totalling some 3.4 million square feet (316,000 square metres) of office space;
- Up to 2,000 homes and serviced apartments;
- The Francis Crick Institute, one of Europe's largest centres of biomedical research, being created through a partnership between six of the UK's most successful scientific institutions;
- A new campus for the prestigious Central Saint Martin College of Art and Design; and
- Up to 500,000 square feet (46,000 square metres) of retail space.

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<sup>11</sup> Source: TfL website - station exit and entry figures.xls

<http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/1592.aspx>

<sup>12</sup> <http://www.kingscross.co.uk/>

### 1.3.2. Stratford International<sup>13</sup>

Stratford International, in east London, is close to the major business district of Canary Wharf and the ExCeL London international exhibition and conference centre. The station played a critical role in the delivery of the 2012 Olympic Games during which the “Javelin” rail shuttle linked St Pancras International and Stratford International.

The station has two platforms for high speed domestic services and two for international services. Currently there are no international services at Stratford International. HS1 Ltd has undertaken initial analysis of the costs and benefits to an international operator of stopping at Stratford International and will share this analysis with train operators considering this option.

The station has an 850 space car park.

#### Connections

Stratford International is served by the Docklands Light Railway (DLR) and is a short walk from Stratford Regional station which is served by:

- Two underground lines and the DLR connecting Stratford with Canary Wharf (journey time 10 minutes), the City (10 minutes) and central London (20 minutes);
- London Overground; and
- Mainline rail services to East Anglia.

There will also be a Crossrail station at Stratford Regional with services expected to commence in 2018/19. The Crossrail project<sup>14</sup> will deliver a high frequency, high capacity suburban rail service linking areas to the west and east of London via new tunnels under central London. Around 200 million passengers are forecast to travel on Crossrail each year.

#### Regeneration

The “London Plan” was published in February 2008 with a time horizon to 2026. The plan forecasts major growth for London with the need for significant additional office space in central London, including near transport hubs. There is particular focus on the redevelopment of large parts of east London, including continued expansion of Docklands and development of the Olympic site at Stratford.

One of the core aims of London’s bid for the 2012 Olympic and Paralympic Games was to use the investment required for Games to help accelerate the renewal of east London. Significant infrastructure improvements were made for the Games and the Olympic Park site in Stratford (renamed the Queen Elizabeth Olympic Park) is being transformed<sup>15</sup> for its legacy uses. From 2013 onwards, parts of the Park and the five permanent 2012 Games sporting venues will begin to reopen alongside the construction of 8,000 new homes and community facilities and a new commercial district (91,000 square metres).

<sup>13</sup> Stratford International station website <http://stratfordintl.co.uk/>

<sup>14</sup> <http://www.crossrail.co.uk/>

<sup>15</sup> <http://noordinarypark.co.uk/>

The Stratford City development adjoins the Olympic Park. Westfield Stratford City is the largest shopping centre in Western Europe. The Stratford City development comprises 1.9 million square feet (176,000 square metres) of retail and leisure, opened in 2011, as well as 1.1 million square feet (100,000 square metres) of office space, three hotels as well as new homes which will be delivered in future phases. Stratford City and the Olympic Park together form a 700 acre (280 hectare) development.

Manhattan Loft Gardens, a stunning cantilevered 42 storey tower including a seven storey hotel, spa, 2 restaurants, 3 sky gardens and 248 private flats, apartments, lofts and penthouses will be located between Stratford International station and Stratford City.

The redevelopment of Stratford is part of the Thames Gateway development programme<sup>16</sup>. The Thames Gateway is the UK's largest economic development programme, stretching for 40 miles along the Thames Estuary from the London Docklands to Southend in Essex and Sheerness in Kent.

### **1.3.3. Ebbsfleet International<sup>17</sup>**

Ebbsfleet International is a parkway station (i.e. a railway station with easy road access and good parking facilities) located near Dartford in north Kent, with connections to the major road network (M25, M20, M2 and A2) giving it a wide catchment area. The station car park has over 5,000 spaces with scope to increase the number of spaces to satisfy demand growth.

The station has two platforms for international services and four for high speed domestic services.

Ebbsfleet International is located in the heart of the Thames Gateway regeneration zone. The Ebbsfleet Valley is being redeveloped<sup>18</sup> as a major residential and business development with 17 million square feet (1.6 million square metres) of floor space for residential, business, retail, leisure and community uses on 1,035 acres (420 hectares) of land.

### **1.3.4. Ashford International<sup>19</sup>**

Ashford International is a parkway station located close to the M20 in east Kent. The station car parks have 1,800 spaces.

The station has two platforms for international services. These platforms are accessed via Network Rail infrastructure. Any train operator intending to stop trains at Ashford International would require a separate Track Access Agreement with Network Rail Infrastructure Ltd (NRIL).

High speed domestic services use the domestic section of the station which is not part of HS1: NRIL owns the freehold of this part of the station and it is currently leased to and operated by LSER. The domestic part of the station has connecting rail services to Kent and East Sussex.

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<sup>16</sup> <http://archive.ltgdc.org.uk/>

<sup>17</sup> Ebbsfleet International station website <http://ebbsfleetintl.co.uk/>

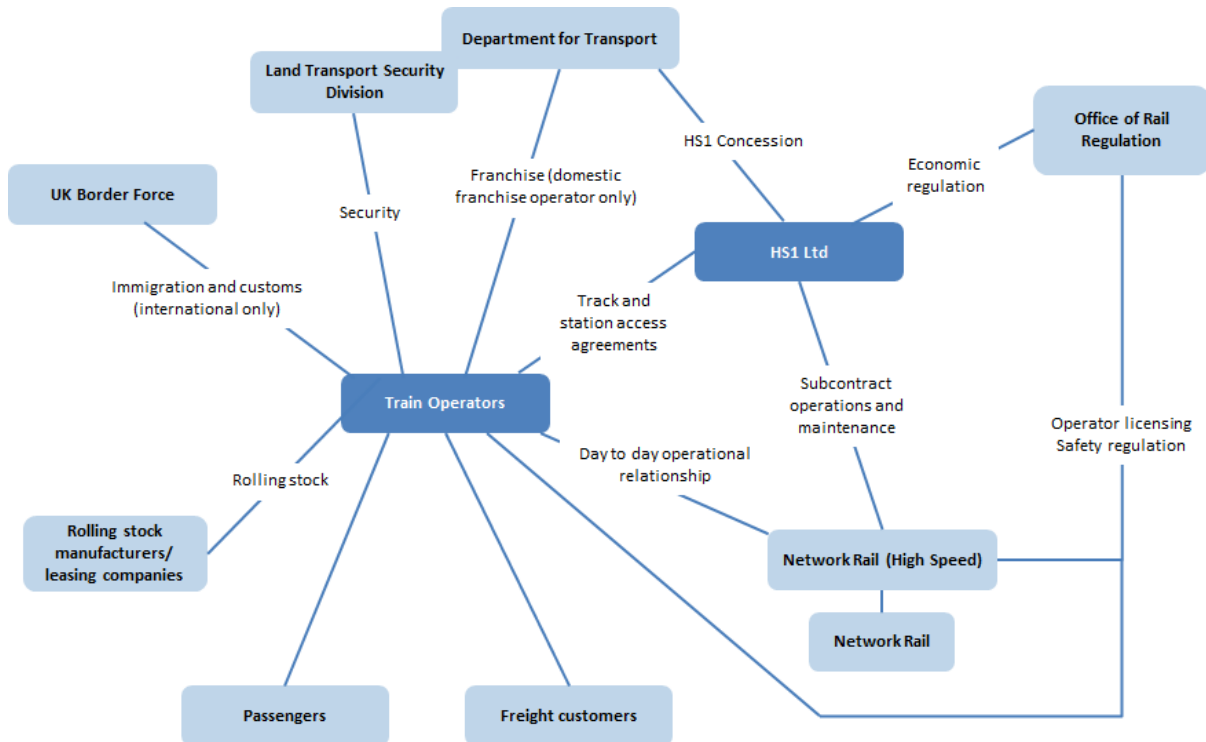
<sup>18</sup> <http://www.ebbsfleetvalley.co.uk/>

<sup>19</sup> Ashford International station website <http://ashfordintl.co.uk/home>

## 1.4. Key industry relationships

Figure 7 summarises the main industry relationships as applied to HS1. It should be noted that some of these may be different on the rest of the UK network.

**Figure 7: Key industry relationships for HS1**



HS1 Ltd holds the concession from the UK government to operate, manage and maintain the HS1 assets. HS1 Ltd subcontracts NR(HS) to operate, maintain and renew the HS1 assets on its behalf.

The current domestic service on HS1 is provided under a franchise agreement awarded by government, international passenger services and freight services are provided by open access operators.

Passenger and freight train operating companies have track access agreements and station access agreements (for passenger services) with HS1 Ltd for use of HS1 infrastructure. Train operators also have direct day to day operational relationships with NR(HS).

The Office of Rail Regulation (ORR) is the economic and safety regulator for the rail industry in Great Britain. The ORR is responsible for licensing and safety regulation of NR(HS) and train operators. It is the economic regulator for HS1 Ltd through the Periodic Review of track access charges. DfT is responsible for regulation of station access charges for HS1.

The Land Transport Security Division of DfT is responsible for security on the rail network and the UK Border Force is responsible for enforcement of immigration and customs regulations.

## 1.5. Document structure

Each of the sections in this guide provides an introduction to a particular aspect of HS1 or to the requirements that a prospective new train operator would need to satisfy before starting to operate services on HS1. Links to sources of further information are provided within the text and summarised at the end of each section.

Summaries and checklists are provided in the following appendices:

- Appendix 5 is a checklist of key contracts and approvals needed by a new operator
- Appendix 6 contains contact details for HS1 Ltd and other organisations
- Appendix 7 combines all of the sources of further information into a single list.

*The information contained within this New Operator Guide (Guide) is provided by HS1 Ltd. The Guide is intended to provide a high level overview of the network and stations comprising HS1 and the steps a prospective train operator may need to take in order to start operating services on HS1. It is not in any way designed to be a complete guide to each topic.*

*Whilst every effort has been made to ensure that the Guide is up to date and accurate, HS1 Ltd does not warrant, nor does it accept any responsibility or liability for, the accuracy, adequacy or completeness of the content or for any loss which may arise from reliance on information contained in this Guide. Links to web sites contained in this Guide are provided for your convenience but HS1 Ltd accepts no responsibility or liability for the content of those sites or of any external site which links to those sites.*

*The contents of this Guide include text, figures, tables, photos and drawings that are the intellectual property of HS1 unless otherwise referenced and all rights are reserved to the greatest extent permitted by law.*



## 2. Stakeholders

HS1 Ltd's main stakeholders and a brief summary of their roles and responsibilities are set out in the table below. Further details are set out in the relevant sections of this guide.

Stakeholder	Role and responsibilities
Department for Transport (DfT) <a href="http://www.gov.uk/dft">www.gov.uk/dft</a>	<p>The Secretary of State for Transport (SoS) is the signatory of the HS1 Concession Agreement and HS1 Lease, which define the rights and obligations of HS1 Ltd with regard to track, stations, land and property.</p> <p>DfT is responsible for the enforcement of station stewardship obligations (track assets are overseen by the ORR on behalf of the SoS).</p> <p>DfT currently supports freight operations on HS1 through a charge on the domestic franchised train operator.</p> <p>DfT also has the responsibility as the Competent Authority to grant or recommend derogations against TSIs to the EC under the Railways Interoperability Regulations 2011.</p>
Land Transport Security Division of DfT (LTSD)	<p>As the transport industry's security regulator DfT sets and enforces security measures. LTSD is the unit in DfT responsible for ensuring that protective security is delivered by operators on the national rail network, London Underground and Channel Tunnel. Further details in Section 3.3.</p>
Office of Rail Regulation (ORR) <a href="http://www.rail-reg.gov.uk">www.rail-reg.gov.uk</a>	<p>The ORR is the independent safety, economic and competition regulator for Britain's railways. The ORR is responsible for licensing operators of railway assets and train operators in Great Britain.</p> <p>The ORR's key functions for HS1 are to:</p> <ul style="list-style-type: none"> <li>• Conduct the Periodic Review of track access charges (further details in Section 10.5.1);</li> <li>• Monitor HS1 Ltd's compliance with asset stewardship obligations and take appropriate enforcement action;</li> <li>• Approve framework track access agreements (further details in Section 3.1.2). ORR is also the appeal body for track and station access; and</li> <li>• Provide safety regulation.</li> </ul> <p>For a new operator the ORR will be responsible for operator licensing (further details in Section 3.1.1), safety certification (further details in Section 4) and vehicle authorisation (further details in Section 5.1).</p>
UK Border Force <a href="http://www.ukba.homeoffice.gov.uk">www.ukba.homeoffice.gov.uk</a>	<p>The UK Border Force is part of the Home Office and is responsible for securing the UK border at international rail stations, air and sea ports and for controlling migration to the UK, enforcing immigration and customs regulations. It works closely with the UK Border Agency and Safeguarding, Immigration, and International Group within the Home Office. Further details in Section 3.4.</p>
UK Monitoring Trustee	<p>The UK Monitoring Trustee monitors commitments concerning access for new international operators to St Pancras International station and Temple Mills depot, and the availability of paths on HS1 infrastructure. Further details in Section 3.5.</p>

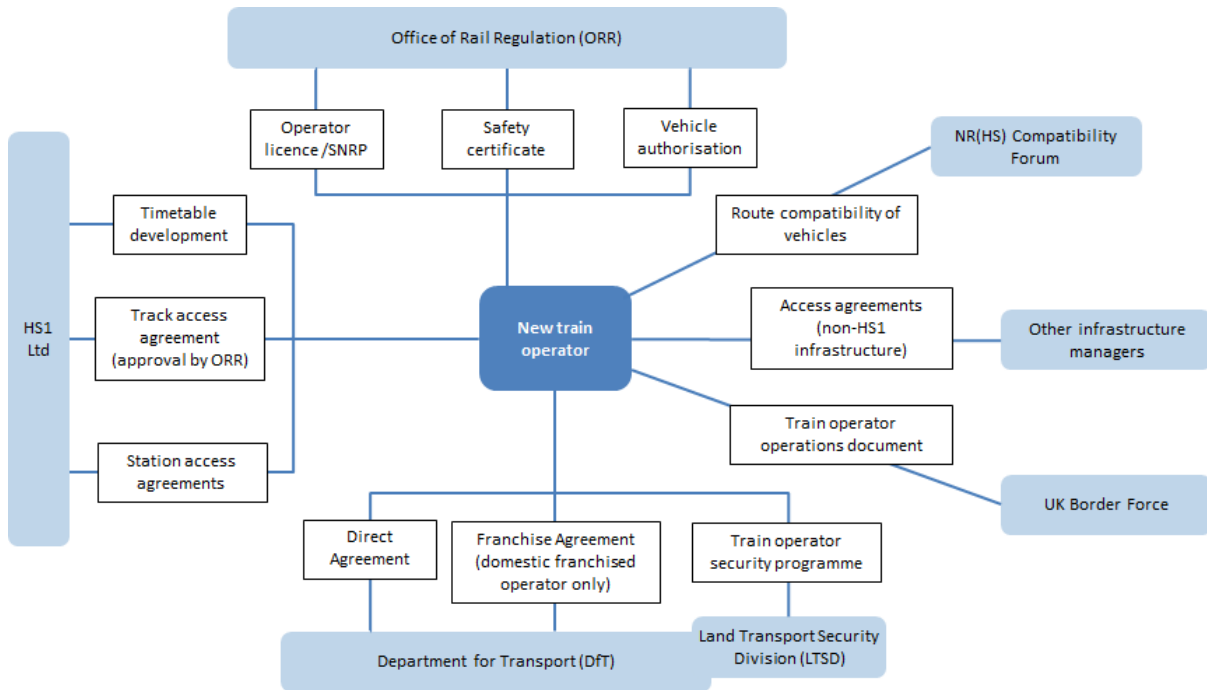
Stakeholder	Role and responsibilities
<p>Network Rail High Speed (NR(HS))</p>	<p>The operation and maintenance of HS1 is undertaken by NR(HS), a wholly-owned subsidiary of NRIL, under the Operator Agreement (for track) and Station Concession Agreements (for St Pancras International, Stratford International and Ebbsfleet International stations).</p> <p>HS1 Ltd and the train operators work closely with NR(HS) on all operational elements, both track and stations.</p> <p>NR(HS) is the Infrastructure Manager and Station Manager under the regulations concerning railway safety.</p> <p>The key responsibilities of NR(HS) are to:</p> <ul style="list-style-type: none"> <li>• Operate and maintain the HS1 infrastructure and the designated stations safely and effectively;</li> <li>• Maintain the Register of Infrastructure on behalf of HS1 Ltd;</li> <li>• Deliver the timetable so far as the infrastructure is concerned and undertake the timetable planning process;</li> <li>• Lead the production of the emergency plan for the HS1 route in conjunction with the train operators; and</li> <li>• Manage the Compatibility Forum, the body to which route compatibility of vehicles must be demonstrated (further details in Section 5.2).</li> </ul>
<p>Network Rail Infrastructure Limited (NRIL) <a href="http://www.networkrail.co.uk">www.networkrail.co.uk</a></p>	<p>Network Rail Infrastructure Limited (NRIL) owns and operates most of Great Britain's main line rail infrastructure, except for HS1.</p> <p>Interfaces between HS1 and NRIL infrastructure are set out in Appendix 3. In particular, NRIL is the Infrastructure Manager for the connecting lines at Ashford International station (but not the Station Manager for the international platforms and international areas at this station).</p>
<p>UK Power Networks Services (Contracting) Limited (UKPN)</p>	<p>UKPN manages, operates and maintains the high voltage distribution systems (the day to day operational interfaces are managed by NR(HS) under the Operator Agreement).</p>
<p>Eurotunnel <a href="http://www.eurotunnelgroup.com">www.eurotunnelgroup.com</a></p>	<p>Eurotunnel is the Infrastructure Manager which operates the Channel Tunnel system (the tunnel and the terminals in France and the UK).</p> <p>It also operates freight and passenger shuttles through the Channel Tunnel.</p> <p>Eurotunnel's Europorte subsidiary operates freight trains.</p>
<p>Channel Tunnel Intergovernmental Commission (IGC) <a href="http://www.channeltunneligc.co.uk">www.channeltunneligc.co.uk</a></p>	<p>The IGC supervises all matters concerning the operation of the Channel Tunnel, including safety and security matters. It is advised and assisted on safety matters by the Channel Tunnel Safety Authority (CTSA).</p> <p>It is also the economic regulatory body for the Channel Tunnel. It is composed of representatives from the UK and French governments and the French and UK safety regulators.</p> <p>The SoS appoints the Head of the UK Delegation, provides a representative with expertise in transport security and appoints the Head of the UK Delegation to the CTSA. The other members of the UK Delegation are representatives of the ORR, the Immigration Service, Her Majesty's Revenue and Customs and a legal adviser provided by the Foreign and Commonwealth Office.</p>

<b>Stakeholder</b>	<b>Role and responsibilities</b>
Eurostar International Ltd (EIL) <a href="http://www.eurostar.com">www.eurostar.com</a>	<p>EIL operates the Eurostar service linking the UK to France and Belgium via the Channel Tunnel.</p> <p>The operation and maintenance of the international section of Ashford International Station is undertaken by EIL as Station Manager.</p> <p>EIL manages the international zones at St Pancras International, Ebbsfleet International and Ashford International stations and is responsible for physical screening of passengers and their luggage.</p> <p>EIL is the depot operator for Temple Mills depot.</p>
London & South Eastern Railway Limited (LSER) <a href="http://www.southeasternrailway.co.uk">www.southeasternrailway.co.uk</a>	<p>LSER, trading as Southeastern, operates domestic high speed passenger services on HS1 under a franchise from the UK government which runs until 2014. Southeastern's high speed services operate over both HS1 and NRIL infrastructure.</p> <p>Trains run from St Pancras International, via Stratford International, to</p> <ul style="list-style-type: none"> <li>• Ashford International where they connect to the NRIL network to serve destinations in east Kent</li> <li>• Ebbsfleet International where they connect to the NRIL network to serve destinations in north Kent.</li> </ul>
DB Schenker Rail (UK) Limited (DBS) <a href="http://www.dbschenker.com">www.dbschenker.com</a>	<p>DBS operates rail freight services on HS1. DBS currently operates two trains per week between Wroclaw, in Poland, and Barking, in London.</p>

### 3. Regulatory bodies and approvals required

Figure 8 shows the key approvals and contracts that a new train operator on HS1 would require and the organisations responsible for approval or authorisation. Regulatory bodies and approvals/authorisations required are discussed in Sections 3, 4 and 5, HS1 contracts are discussed in Section 9.

**Figure 8: Contracts and approvals/authorisations required by a new train operator on HS1**



Timescales will be dependent on each operator’s specific circumstances and service plans. Figure 9 shows indicative timescales for obtaining the approvals, authorisations and contracts shown above. This will form only a part of the wider programme of activities for a new train operator which will include activities relating to use of other infrastructure, such as the Channel Tunnel (this is likely to be particularly important in the case of international operators where HS1 is only a small part of a longer route); rolling stock procurement; and the train operator’s own requirements such as staff recruitment and training.

For a new domestic franchised operator timescales may differ from those shown in Figure 9 as DfT will cover some of the requirements during the refranchising process and access agreements will be novated from the existing franchisee: a new domestic franchised operator will need to obtain a licence/SNRP and safety certificate.

**Figure 9: Indicative timescales for approvals, authorisations and contracts**

Workstream/activity	With	Months	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
			Start of operations																									
Operator licence and SNRP	ORR																											
Approval of security programme	DfT LTSD	← Discussions/preparation of security programme																										
UK Border Force approval	UKBF	← Discussions/preparation of operations document																										
Safety certificate	ORR																											
Vehicle authorisation (if needed)	ORR																											
Demonstration of route compatibility	NR(HS)																											
Timetable development	HS1 Ltd	← Initial timetable discussions																										
Track access agreement	HS1 Ltd																											
Approval of track access agreement	ORR																											
Station access agreement(s)	HS1 Ltd																											
Direct Agreement	DfT																											

### 3.1. ORR

The ORR is the National Safety Authority (NSA) for railways in Great Britain with responsibilities for safety certification and vehicle authorisation. New operator requirements in these two areas are set out in Sections 4 and 5 respectively.

#### 3.1.1. Operator licence and Statement of National Regulatory Provisions (SNRP)

A passenger or freight train operator in Great Britain is required to hold a European passenger licence or European freight licence, and a Statement of National Regulatory Provisions (SNRP).

ORR is responsible for granting European licences, Railways Act licences and SNRPs in Britain'. The ORR recognises European licences issued in other European Economic Area states so a train operator who already holds such a licence will not be required to reapply in Great Britain. They will, however, be required to apply to ORR for an SNRP.

The purpose of the SNRP is to ensure that train operators comply with conditions for operating in Great Britain, for example, the requirement to maintain third party liability insurance (train operators must have third party liability insurance cover of at least £155 million per incident) and the provision of services to disabled people. [Model licences and SNRPs](#) are published on the ORR website. The ORR may vary the conditions in the model SNRPs if appropriate.

A new operator will need to complete the [licence application form](#) which is available on the ORR website: this form covers both licences and SNRPs. The application form covers company and financial information, safety competence, the nature of the planned operations and insurance cover: guidance notes are included within the form. Licensing queries should be directed to [licensing.enquiries@orr.gsi.gov.uk](mailto:licensing.enquiries@orr.gsi.gov.uk). Applicants are advised to discuss their application with ORR well in advance of making a formal application.

Once an application is received, the ORR will consider the application and consult with interested parties. The time taken for ORR to grant a licence/SNRP will depend on the complexity of the issues in the application and the comments received by the ORR during the consultation period. At least 12

weeks should be allowed for straightforward applications with all the suggested information prepared, more time should be allowed in other cases.

Further information is available on the [operator licensing page](#) of the ORR website.

#### Summary of web links

Operator licensing page <http://www.rail-reg.gov.uk/server/show/nav.192>

Model licences and SNRPs <http://www.rail-reg.gov.uk/server/show/nav.1962>

How to apply for a licence <http://www.rail-reg.gov.uk/server/show/nav.197> - this page includes the licence application form and ORR's "Criteria and procedures for granting licences and licence exemptions"

### 3.1.2. Approval of track access agreements

All passenger and freight train operators planning to operate services on HS1 must enter into a track access contract with HS1 Ltd. A Framework Track Access Agreement (FTAA) is a track access contract covering more than one year: all new and revised FTAA's require ORR approval. Track access contracts covering a period of one year or less do not need ORR approval.

The first step is for HS1 Ltd and the train operator to discuss and agree access rights and to develop a track access contract: this is covered in more detail in Section 9.1.1. During the development of the track access contract the ORR will be involved on an informal basis through meetings with HS1 Ltd and the train operator. A draft of the track access contract will be shared with the ORR before formal submission for ORR approval.

The ORR has published its [criteria and procedures for the approval of framework agreements for HS1 \(C&Ps\)](#). This document sets out the procedures which train operators and HS1 Ltd should follow when submitting access applications for ORR approval and the process for ORR consideration and review. The steps in the process are:

1. HS1 Ltd and the train operator develop the access agreement, including discussion with potentially affected parties
2. HS1 Ltd leads a pre-application industry consultation
3. HS1 Ltd and the train operator submit the application to ORR
4. Consideration/review by ORR
5. ORR conclusions and approval

ORR advises that at least six weeks should be allowed for the industry consultation process followed by up to twelve weeks for ORR review of a contentious contract or six weeks for ORR review of a more straightforward application.

Station Access Agreements for the use of HS1 stations (see Section 9.1.2) do not need ORR approval.

Further information is available on the [HS1 access regulation page](#) of the ORR website.

**Summary of web links**

HS1 access regulation page <http://www.rail-reg.gov.uk/server/show/nav.2507>

Criteria and Procedures for the approval of framework agreements on the HS1 network, January 2013 [http://www.rail-reg.gov.uk/upload/pdf/hs1\\_criteria\\_and\\_procedures.pdf](http://www.rail-reg.gov.uk/upload/pdf/hs1_criteria_and_procedures.pdf)



*Ebbsfleet International station*

**3.2. Department for Transport (DfT)**

Train operators may be required to enter into a Direct Agreement with the Secretary of State, HS1 Ltd and its financiers. This requirement will depend on the operator type (passenger/freight) and service levels operated. Direct Agreements provide a framework for HS1 Ltd’s financiers to provide a suitable substitute for HS1 Ltd (within a defined period) should the Secretary of State exercise its rights (following any applicable remedial period) to remove the concession from HS1 Ltd following a default under its Concession Agreement. The Direct Agreements also provide train operators with continuation of access rights in this situation.

A new domestic franchised operator will need to have secured the right to run the franchise via the DfT’s franchise tendering process. It is expected that the high speed services operating on HS1 will continue to form part of a much larger franchise(s) including non-high speed domestic services on the Network Rail domestic network.

**3.3. DfT, Land Transport Security Division (LTSD)**

The DfT plays a key role within the Government’s counter-terrorism strategy for the national rail network, London Underground and the Channel Tunnel. The Land Transport Security Division (LTSD) is the unit in DfT responsible for ensuring that protective security is delivered by operators. As the transport industry’s security regulator DfT sets and enforces security measures that take account of

the nature and magnitude of the threat. The costs associated with delivering security measures is the responsibility of the industry under the “user pays” principle.

Security standards for UK domestic rail services are set out in the National Railways Security Programme (NRSP) which is issued to train operators, Network Rail and others with direct involvement in railway security.

For international rail services operating out of the UK, the Channel Tunnel (Security) Order 1994 requires Eurotunnel and other operators using the Tunnel to implement counter-terrorist security measures. Operators are responsible for the day to day delivery of security which includes the screening of vehicles, passengers, baggage and freight. The governments of the UK and France protect the Channel Tunnel as part of their territorial sovereignty and security measures deployed in France and Belgium are comparable with those in the UK. Operators of any new services from other states must deploy consistent measures.

Operators intending to run new services through the Channel Tunnel should contact Joe Ismail, ([joe.ismail@dft.gsi.gov.uk](mailto:joe.ismail@dft.gsi.gov.uk), 020 7944 2848) at an early stage to discuss the security regime in place in the UK. Also discussions will need to include the French authorities who take the lead for protection of the Tunnel from French territory. New service operators will be expected to produce a security programme documenting their proposed security arrangements for consideration by the UK and French authorities under the auspices of the Intergovernmental Commission’s Joint Security Committee for the Channel Tunnel.

### **3.4. UK Border Force**

The UK Border Force is part of the Home Office and is responsible for securing the UK border at international rail stations, air and sea ports and for controlling migration to the UK, enforcing immigration and customs regulations. It works closely with the UK Border Agency and Safeguarding, Immigration, and International Group within the Home Office. Further information is available on the [UK Border Agency website](#).

Potential new operators of international rail services to the UK should contact the Home Office and Border Force at the earliest stage to discuss their proposed operation. This requirement is separate from and in addition to security requirements administered by LTSD. Contact details are as follows:

- UK Border Force: Simon Eglesfield ([Simon.Eglesfield@homeoffice.gsi.gov.uk](mailto:Simon.Eglesfield@homeoffice.gsi.gov.uk))
- Home Office: Colin Jackson ([Colin.Jackson@homeoffice.gsi.gov.uk](mailto:Colin.Jackson@homeoffice.gsi.gov.uk)) or Martin Maynard ([Martin.Maynard2@homeoffice.gsi.gov.uk](mailto:Martin.Maynard2@homeoffice.gsi.gov.uk))

Border Force will advise the operator of the requirements they will need to meet in order to comply with UK Immigration & Customs legislation. The operator will then be required to submit a proposed operation document detailing how it will comply with these requirements and submit the document to Border Force for approval. The document should be submitted at least 24 months in advance of the proposed operational commencement date.

The operation document should include details of: the proposed operating timetable; the proposed commencement date of the service; the passenger capacity of the rolling stock; whether rolling



stock has been ordered and safety certification issued; the proposed arrangements for Schengen exit checks and relevant contact details.

A new service will not be able to begin operations until UK and Schengen border controls arrangements have been agreed and are in place.

Juxtaposed controls are where Schengen exit and UK arrivals checks, or vice versa, are co-located and completed in line with physical security checks prior to passengers boarding the train. The UK currently operates juxtaposed controls in Paris Gare du Nord, Brussels Midi, Lille Europe and Calais-Fréthun. Where these arrangements presently exist, it is expected that new operators will use them, subject to the agreement of the relevant authorities of the state in which the juxtaposed controls are located. The UK does not intend to introduce new juxtaposed arrangements beyond those currently operating.

Where a prospective new service will operate from a station not served by existing juxtaposed controls, new operators should anticipate that either:

- UK border control arrivals checks will be completed on arrival at a UK international station; or
- The train operator will include a last cabotage/service stop at an existing juxtaposed control station within the Schengen area which would allow both Schengen exit and UK arrivals checks to be completed. This would require the agreement of the relevant control authority in that country.

On-train border controls are not a preferred option for the Border Force. If an individual case was to be made, the operator may be liable for the additional costs to the Border Force that would arise.

UK Border Force guidance for international train operators will be available on the [DfT website](#) from February 2013.

#### Summary of web links

UK Border Agency website <http://www.ukba.homeoffice.gov.uk/>

### 3.5. UK Monitoring Trustee

EIL, HS1 Ltd, SNCF and SNCB have made [commitments to the European Commission](#) (EC) to provide fair and non-discriminatory access to relevant stations and/or maintenance centres (for stabling, servicing, cleaning and light maintenance) and paths with the overall aim of facilitating Railway Undertakings wishing to provide a cross-Channel passenger transport service. The commitments are for a ten year period with a possibility of review after five years.

The commitments in respect of the UK concern access to St Pancras International station and Temple Mills depot, and the availability of paths on HS1 infrastructure.

Chris Bolt was appointed as the UK Monitoring Trustee in relation to these commitments. He

- Has regular meetings with EIL and HS1 Ltd and reviews steps being taken by them to prepare for potential new international passenger services;
- Meets with potential new international operators if requested; and

- Provides an annual report to the EC.

He can be contacted at [cwbolt@gmail.com](mailto:cwbolt@gmail.com).

There are also French and Belgian Trustees who have similar roles in relation to commitments in these two countries. These commitments cover access to Paris Gare du Nord, Lille Europe, Calais Fréthun, Marne-la-Vallée and Brussels Midi stations, maintenance services at Le Landy (France) and Forest (Belgium) and paths on the London/Paris and London/Brussels routes.

#### **Summary of web links**

EIL, HS1 Ltd, SNCF and SNCB commitments

[http://ec.europa.eu/competition/mergers/cases/decisions/M5655\\_20100617\\_20212\\_831906\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/M5655_20100617_20212_831906_EN.pdf)

## 4. Safety Certification

The [Railways and Other Guided Transport Systems \(Safety\) Regulations 2006](#), as amended, (ROGS)<sup>20</sup> provide the regulatory regime for rail safety in Great Britain. They implement the 2004 European Railway Safety Directive (as amended in 2008), as well as other safety requirements specific to the UK, for example the safety critical requirements concerning the competence of holders of certain types of tasks such as train drivers. The Safety Directive aims to create a common framework for railway safety across the European Union.<sup>21</sup>

The ORR is the National Safety Authority (NSA) for railways in Great Britain. ROGS requires all mainline train operators to maintain a safety management system (SMS) and hold a [safety certificate](#) indicating that the SMS has been accepted by the ORR. To obtain a safety certificate, applicants need to describe how their safety management system allows them to run their transport system safely. ORR will focus on checking that safety management systems are effective, meet the requirements of ROGS and are fit for the purpose they are being used for.

The safety certificate is issued according to a European harmonised format and comprises two parts:

- Part A is a high level certificate transferable between EU Member States which demonstrates Safety Authority acceptance of generic SMS components. Part A only has to be authorised by the NSA of one Member State and is then valid for that operator in all other Member States.
- Part B is concerned with an operation within a single EU Member State and is not transferable between Member States. A train operator will need a Part B for each of the networks on which it operates, accepted by the NSA of the relevant Member State. It should be noted that, for the purposes of safety certification, the NSA for the Channel Tunnel is the Channel Tunnel Intergovernmental Commission (IGC) which is advised by the Channel Tunnel Safety Authority (CTSA). In each Part B application a train operator must provide evidence to show how its SMS will comply with network-specific rules and demonstrate how it will manage any network-specific risks. Part Bs may be valid for passenger services, freight services or both.

If a train operator is responsible for its own train despatch it will have to include its specific plans in its Part B application and reach agreement with the holder of the Safety Authorisation<sup>22</sup> for the station concerned. This is NR(HS) for St Pancras International, Stratford International and Ebbsfleet International and currently EIL for Ashford International. If an existing operator undertakes train despatch for another operator, the existing operator will need to make a minor modification to its Part B. The train operator's decision on who will undertake train despatch is likely to be based on the level of service to be operated.

HS1 has a number of long tunnels and the train operator will need to demonstrate that its Safety Management System will enable safe evacuation of passengers and train crew from its train in such a tunnel in the event of an emergency. Facilities such as tunnel ventilation, cross passages to the adjacent tunnel and radio communication are provided to facilitate this.

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<sup>20</sup> The ORR has published proposals (October 2012) to further amend ROGS. The ORR web site should be consulted for the latest version of ROGS and associated guidance.

<sup>21</sup> Switzerland has also voluntarily adopted EU safety and interoperability directives and daughter legislation.

<sup>22</sup> As proscribed under the ROGS for a Station Manager

NR(HS) is responsible for the co-ordination of emergency plans and the train operator must agree the plans with NR(HS) and reference them as part of the SMS in its Part B application.

For the UK, a new operator will need to complete the [safety certificate application form](#) available on the ORR website and prepare the supporting documentation required (a list is provided in the application form). The ORR website also includes [application guidelines](#) and “[A Guide to ROGS](#)” which provide more information about the legislation, the application process and what will be required from applicants.

If a train operator plans to use both HS1 and the NRIL network only one Part B application to the ORR is needed for the UK, taking into account the specific requirements for both HS1 and the NRIL network. A separate Part B application will have to be made to the CTSA if the train operator plans to operate in the Channel Tunnel: further information is available on the [IGC website](#).

If a train operator contracts with a third party to provide the locomotives and drivers for its train service then that third party will need the safety certificate.

The completed application form and supporting documentation should be submitted to the ORR. Applicants must also send a copy of their safety certificate application to all affected parties (which include HS1 Ltd, NR(HS) and other train operators who operate on HS1 as well as the applicant’s staff representatives) who have 28 days to respond. Following this 28 day period, the ORR then has four months to carry out its main assessment of the application and reach a decision. Under the 2012 ROGS amendment, the 28 days for affected parties to respond will run concurrently with the 4 months for ORR assessment. Once awarded, the safety certificate will last for up to 5 years.

Queries about safety certification should be directed to:

Executive - Permissioning & Divisional Support  
Railway Safety Directorate - Office of Rail Regulation  
1 - 2 Peasholme Green  
York YO1 7PX  
Phone: 0207 282 3772

#### Summary of web links

ROGS page <http://www.rail-reg.gov.uk/server/show/nav.1511>

A Guide to ROGS, September 2012 <http://www.rail-reg.gov.uk/upload/pdf/rogs-guidance-sept12.pdf>

Safety certificates and authorisation page <http://www.rail-reg.gov.uk/server/show/nav.1520>

Safety certificate application form [http://www.rail-reg.gov.uk/upload/pdf/Sfty-cert\\_mnl\\_n\\_apfrm.pdf](http://www.rail-reg.gov.uk/upload/pdf/Sfty-cert_mnl_n_apfrm.pdf)  
and guidelines for completion [http://www.rail-reg.gov.uk/upload/pdf/guides4completion\\_2.pdf](http://www.rail-reg.gov.uk/upload/pdf/guides4completion_2.pdf)

IGC website Regulations and Guidance page <http://www.channeltunneligc.co.uk/-Regulations-and-guidance-.html?lang=en>

## 5. Vehicle Authorisation and Route Compatibility

There are two separate processes that must be undertaken before a vehicle can operate in service:

- Vehicle authorisation; and
- Demonstration of route(s) compatibility.

Vehicle authorisation is undertaken in accordance with the requirements of the Railway Interoperability Directive as implemented in the UK by the Railways (Interoperability) Regulations 2011 (RIR). Once vehicle authorisation has been obtained, Route Compatibility is carried out by the train operator in accordance with the Safety Management System described in its Safety Certificate and in co-operation with the infrastructure manager and other train operators using the required route(s).

### 5.1. Vehicle Authorisation

All new rail vehicles must comply with the Railway Interoperability Directive, the relevant TSIs and relevant National Technical Rules (NTRs) for the Member State(s) in which they are required to operate. Vehicles must be authorised by the NSA of an EU Member State in accordance with the Railway Interoperability Directive. If a vehicle has been authorised in another Member State the authorisation is valid for the UK: the ORR does not require re-authorisation.

If a vehicle has been authorised as one of a type then any number of vehicles of the same type are authorised (for a limited time period) provided they are identical in terms of how they comply with the TSIs and NTRs.

Authorisation of new vehicles is normally made the responsibility of the manufacturer by a contract with either the purchaser or lease holder of the vehicles.

There is no mandatory time limit for ORR to determine an authorisation but ORR suggests that applicants should build 4 months into their project timescales.

If modifications to existing vehicles are required (for example to parameterise the TVM 430 on board signalling system on a locomotive or multiple unit with the characteristics of the HS1 infrastructure) further advice on the processes to be followed will be available from NR(HS). HS1 Ltd owns the intellectual property rights for the parameterisation of TVM 430 for a Class 92 locomotive with HS1 parameters and will provide the train operator with the relevant information.

#### Reference Document Database (RDD)

This database is operated<sup>23</sup> by the European Rail Agency (ERA). It contains all the NTRs that each Member State has specified to be complied with to enable a vehicle to be authorised to operate in that Member State. It also contains the National Legal Framework that is used in each Member State to authorise a vehicle, as well as flow charts for each Member State showing the process that has to be adopted to obtain vehicle authorisation. The intention is that a train operator can consult the Reference Document Database (RDD) to establish all the NTRs and the legal processes that will apply

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<sup>23</sup> The RDD is expected to be live from a date in the first half of 2013

to a vehicle required to be authorised to operate between different Member States. This should save time and cost by enabling the scope of requirements to be established.

The NTRs cover some 350 vehicle parameters listed by the EC such as its braking capability, gauge etc. It is recognised that an NTR covering a particular parameter in Member State “A” may be shown to be equivalent to a different NTR in Member State “B”. Therefore the Member States concerned are being encouraged to declare those NTRs in other Member States that they will recognise as being equivalent to their own NTRs. The classifications will be shown in the RDD. This process is designed to avoid unnecessary re-checking of vehicle parameters that have already been authorised in another Member State.

As already noted, a vehicle already authorised in another Member State is not required to be re-authorised to operate in the UK. However a vehicle first authorised in the UK will be required to be re-authorised in each Member State in which it operates<sup>24</sup>, including the CTSA for vehicles to be operated in the Channel Tunnel.



*Southeastern Highspeed train*

## **5.2. Demonstration of Route Compatibility**

It is also necessary to demonstrate that the vehicles are compatible with the route(s) over which they will operate. The train operator is required to prepare a submission to the Compatibility Forum (described below) which demonstrates that the vehicles are compatible with the HS1 route and that they will not have an adverse impact on other trains on HS1 or adjacent routes.

If a train operator is planning to use rolling stock of the same type as already in use on HS1 there is no requirement to undertake route compatibility again.

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<sup>24</sup> Currently only Austria and the UK do not require re-authorisation of vehicles already in service.

The RDD UK section contains an HS1 NTR which describes the process to be used for demonstrating compatibility (the UK NTRs will be available from the [ERA Reference Document Database](#) from early 2013). A train operator wishing to demonstrate compatibility of its vehicle(s) with the HS1 routes must comply with this process.

Those HS1 NTRs in the RDD which concern vehicle interaction with the infrastructure are also used as a “checklist” for route compatibility: in the majority of cases such NTRs require compliance with a particular clause in a TSI. For certain vehicle parameters the RDD refers to the HS1 Section 1 Register of Infrastructure and HS1 Section 2 Register of Infrastructure, which are available from HS1 Ltd on request. Some of the key HS1-specific requirements are summarised in Section 6 of this guide.

NR(HS) (as Infrastructure Manager under the safety directives) operates the Compatibility Forum, which is the body to which train operators must demonstrate route compatibility of vehicles. Normally this is by submission of a checklist demonstrating compatibility with the relevant parameters in the HS1 part of the RDD UK section. The Compatibility Forum normally meets every four weeks; it is chaired by an independent chairman and has representatives of other train operators on HS1 and the relevant professional heads of NR(HS).

Route compatibility also covers how the operator’s trains can be rescued should this be required. The preference would be to recover them with another train of the same type, but rescue using a locomotive can be considered. Such rescue locomotives are arranged with Eurotunnel by NR(HS), but will require couplers to be compatible with those on the train to be rescued (as described in the RDD). The train operator will need to agree such arrangements as part of its emergency planning with NR(HS). An international passenger train operator will also need to consider where its failed trains should be hauled to. HS1 Ltd will support the train operator in this process.

It is not mandatory for vehicles to be tested on HS1 infrastructure. However, train operators may wish to carry out “confidence” testing e.g. testing of evacuation procedures.

**Summary of web links**

ERA Reference Document Database <http://www.era.europa.eu/Core-Activities/Cross-Acceptance/Pages/Reference-Document-Database.aspx>

## 6. Route Information

Section 3 of the [HS1 Network Statement](#) provides a summary of HS1 infrastructure. Full technical requirements for vehicles are available in the UK RDD HS1 section together with the HS1 Section 1 Register of Infrastructure and the HS1 Section 2 Register of Infrastructure (see Section 5.1 above).

This section, in conjunction with the HS1 Route Fact Sheet in Appendix 3, provides further background information regarding the safety and operations control systems used on HS1 and the interfaces of HS1 with other Infrastructure Managers.



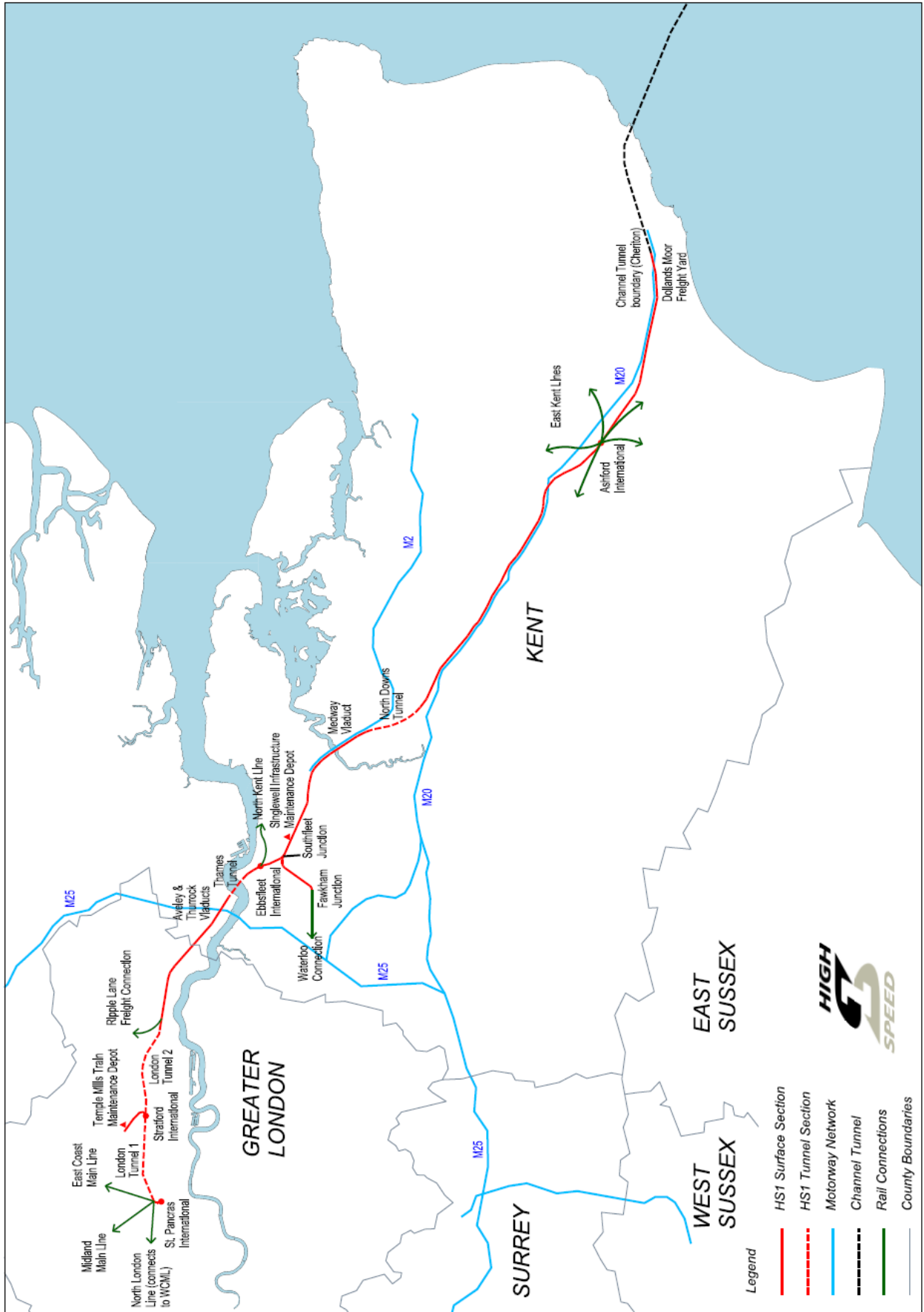
*Medway Bridge*

It should be noted that the connecting lines and trackside assets between HS1 and Ashford International Station are part of the NRIL network and have some different characteristics to the HS1 infrastructure as noted below.

A route map of HS1 showing stations, significant tunnels and viaducts and connections with other networks and facilities is shown in Figure 10 overleaf.



Figure 10: HS1 route map



## 6.1. Signalling systems

St Pancras International Station and its approaches are controlled by multi aspect colour light signals and the KVB system. The KVB is a speed supervision and Automatic Train Protection (ATP) system. TVM 430 is used on the remainder of HS1 (as well as on the Channel Tunnel, TGV Nord and Belgian high speed lines). It is an ATP signalling system with an in cab signalling functionality. Where HS1 connects to the NRIL network, TVM 430 interfaces with standard UK lineside signalling.

Passenger rolling stock operating on HS1 must be fitted with the TVM 430 on board signalling system parameterised for HS1 and KVB. The parameterisation of the on board TVM 430 system involves matching the braking, acceleration and length of the train or vehicles with the characteristics of the route enabling the speed codes transmitted to the train to be correctly interpreted by the Automatic Train Protection (ATP) system on the train.

Freight trains operating on HS1 must be fitted with TVM 430, parameterised for HS1, plus compatibility to operate Automatic Power Control (APC) magnets located on HS1.

All trains intending to cross on to the NRIL network must be fitted with Automatic Warning System/Train Protection and Warning System (AWS/TPWS) compliant with UK Railway Group Standard GE/RT8030<sup>25</sup>. An exception may be granted to this requirement by NRIL for trains normally operating on HS1 to call at Ashford International station and return to HS1, subject to suitable safety risk mitigation.

## 6.2. GSM-R

GSM-R is installed throughout HS1 but is currently used only as a general purpose maintenance and station operations radio. HS1 Ltd plans to upgrade the system to “signaller to driver” communications on HS1 and then to extend it to allow communication with Channel Tunnel and French signallers. The expected completion dates for these two phases are December 2013 for the upgrade to the existing system and July 2014 for international roaming. Any changes will be subject to discussions with existing train operators.

Currently all trains must be fitted with Cab Secure Radio (CSR), complying with BR1845 Issue H (including the October 1995 amendment) and BR 1989 specifications. When GSM-R has been upgraded the CSR will be removed.

## 6.3. Regenerative braking

HS1 has an authorised derogation from the regenerative braking clause of the Energy TSI. If rolling stock is fitted with regenerative braking capability, this must currently be inhibited whilst operating on HS1.

As part of our commitment to continual improvement in our sustainability performance, a study is currently underway to determine whether a viable business case exists to alter the infrastructure to enable regenerative braking to be used on HS1. This study is expected to conclude in mid-2013.

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<sup>25</sup> UK Railway Group Standards can be found on [www.rgsonline.co.uk](http://www.rgsonline.co.uk)

## 6.4. Traffic control

The Ashford AFC is the combined traffic control, signalling control, electrical control and communication centre for HS1 and is responsible for all day-to-day railway operating activities. The HS1 operating activities are co-located in the same building on the same operating floor as the NRIL IECC.

Trains on HS1 are regulated according to train regulation policies agreed in accordance with Part H (Operational Disruption) of the [HS1 Network Code](#). Traffic is regulated by the management of real time performance. The Ashford AFC operates the overall traffic management system which contains the following:

- Automated route setting;
- Automated conflict resolution; and
- Train graphing technology for perturbation management and very short term train planning (VSTP).

The NRIL network around HS1 is controlled from Ashford IECC and Kent ICC (near Blackfriars). Decisions for the whole area (excluding HS1) are made from KICC, decisions for HS1 are made at Ashford AFC.

Ashford International station is a convenient location to which international trains may be hauled by rescue locomotives from the Channel Tunnel in case of train failure. The station provides useful connectivity with domestic rail services to help manage the onward travel of passengers in such a scenario. In order to make use of this facility, vehicles would need to be cleared for operation on that part of the NRIL network through the Ashford International platforms and their approaches (see the final paragraph of Section 6.1 above).

### Summary of web links

HS1 Network Statement <http://highspeed1.co.uk/regulatory/network-statement/>: Section 3 deals with infrastructure

HS1 Network Code <http://highspeed1.co.uk/regulatory/codes/> – Part H deals with Operational Disruption

NRIL's Network Statement <http://www.networkrail.co.uk/aspx/3645.aspx>

## 7. Stations

This section covers the responsibilities of HS1 Ltd, NR(HS) and EIL at HS1 stations, station facilities and services, security and border control. Station maps and supplementary factual information about the stations can be found in Appendix 4 HS1 Station Fact Sheet.

### 7.1. Station ownership, operation and maintenance

#### 7.1.1. Station Facility Owner (SFO)

HS1 Ltd is the Station Facility Owner (SFO) at St Pancras International, Stratford International, Ebbsfleet International and the international part of Ashford International. The domestic part of Ashford International does not form part of HS1; the SFO is Southeastern. As SFO, HS1 Ltd is responsible for maintenance, repair and renewal of station buildings and facilities, station cleaning and security.

A new operator's contractual relationship will be with HS1 Ltd: operators using HS1 stations will have Station Access Agreements with HS1 Ltd (see Section 9.1.2) and will pay station access charges to HS1 Ltd (see Section 10.1.2). HS1 Ltd will have regular customer relationship meetings with the new train operator and both parties will work closely with NR(HS) on all operational issues.

#### 7.1.2. Station operation and maintenance

With the exception of the Restricted Zones (RZ), St Pancras International, Stratford International and Ebbsfleet International are operated and maintained by NR(HS) on behalf of HS1 Ltd under Station Concession Agreements. NR(HS) holds the Safety Authorisation for these stations under ROGS and acts as premises landlord under the Health and Safety at Work Act 1974.

NR(HS) is currently responsible for providing the following services at these stations. NR(HS) could consider providing additional services for new operators using HS1 stations.

- Station management for all HS1 stations comprising 24/7 station operations, management of security and customer service staff, station control room operations, fire safety, station announcements/CIS/ boarding trains (for one domestic operator), vehicle access control for all station deliveries;
- Security in all publicly-accessible areas outside the RZ (and non-public areas);
- Customer service in public areas outside the RZ;
- Customer assistance for assisted travel outside the RZ;
- Management of safety and security for all station areas outside the RZ including safety action plans, fire safety management, emergency planning and crowd control;
- Liaison with internal and external stakeholders such as British Transport Police, local and county/city councils, Metropolitan police, Kent police, ambulance and fire services, train operators and suppliers for matters relating to crime, fire prevention, events, etc.;
- Management of retail units outside the RZ, station events, promotions, filming, photography and exhibitions.

NR(HS) does not currently supply the following station services:

- Security of international Restricted Zone;
- Ticket office services; and
- Dispatch of trains from platforms.

NR(HS) will allocate a client liaison manager to co-ordinate its interface with the train operator and shift/duty managers and station managers will be in regular dialogue necessary for the smooth running of operations. NR(HS) will work closely with all operators to ensure that operations do not conflict and that the customer experience is seamless; this includes planning operational solutions for peaks and periods of disruption and business continuity in times of disruption whether driven by external factors or a train operator or infrastructure need.

The international part of Ashford International is operated and maintained by EIL on behalf of HS1 Ltd under the Station Management Agreement, an interim arrangement put in place in 2010 when the Ashford International station leases were transferred to HS1 Ltd. This role is currently out to tender, new arrangements will be effective from July 2013.

### **7.1.3. International zones (IZs)**

The IZs at St Pancras International, Ebbsfleet International and Ashford International are currently operated and managed by EIL and used only by EIL. Facilities management in the IZ at Ebbsfleet International and St Pancras International is carried out by NR(HS) on behalf of EIL.

[Annex 10 of the St Pancras International Station Access Conditions](#) sets out the common station amenities and services provided in the International Zone and identifies which of these are provided by the Principal International Operator (PIO), the main international train operator at the station.

HS1 Ltd and EIL have agreed that changes will be made to this Annex 10 to facilitate sharing of the IZ by international operators, in particular, some of EIL's current responsibilities will transfer to HS1 Ltd. In most areas specific proposals for change have been agreed in principle and these are summarised in the relevant sections below. EIL and HS1 Ltd's commitments to facilitate the entry of new international rail operators at St Pancras International are monitored by the UK Monitoring Trustee (see Section 3.5).

Where IZ responsibilities remain with EIL, new international operators will work closely with EIL at an operational level to ensure the smooth running of their business. All charges related to the IZ will be charged to the train operators through HS1 Ltd's station access charges.

Where required for the introduction of new international operators, the transfer of responsibilities at Ebbsfleet International and Ashford International will follow similar principles as at St Pancras International although details at each station may vary.

Stratford International Station is currently not used by international services; the first international operator to use the station will take on the PIO role. Before use, the Stratford International IZ will need final fit-out with equipment (customer communication systems and security search), wayfinding and furniture.



*St Pancras International station*

## **7.2. Branding and signage**

One-off modifications to station signage and wayfinding will be needed to accommodate a new operator at HS1 stations. HS1 Ltd will identify and agree necessary changes with all affected train operators and will deliver the changes.

Inside the IZ, responsibility for signage currently lies with EIL. The agreed approach for any changes to signage to accommodate new operators is for HS1 Ltd to identify and deliver changes both inside and outside the IZ, in order to ensure non-discrimination between train operators.

In order to avoid the proliferation of branding and languages at stations where there is more than one international operator, the principle will be that generic signage in most of the station will refer to “International” services rather than specific operators and will be in English. In some instances specific branding and signage in additional languages will be appropriate e.g. ticket sales and customer information desks.

St Pancras International is a Grade I listed building and all changes are subject to control by London Borough of Camden and English Heritage in accordance with statutory consents: the process is managed by HS1 Ltd. Change is permitted but it needs to be appropriate and not impact on the architectural and historic importance of the building.

At Stratford International the international zone is a blank canvas. The first international operator at the station would have an input into signage, branding and the style of fit out.

### **7.3. Staff accommodation**

Space for staff accommodation in HS1 stations is limited, particularly at St Pancras International. The existing operators in HS1 stations base only essential operational staff at the stations with management and other support functions located elsewhere and new train operators will be expected to do the same.

HS1 Ltd encourages the sharing of facilities between train operators as a space and cost efficient solution. The current situation and opportunities for sharing of facilities at each station are as follows:

- At St Pancras International a new operator could share crew mess rooms and toilet facilities with East Midlands Trains. The available space in the station may not be directly adjacent to the work reporting area and a new operator should therefore make some allowance for walking distances in their operational planning. If crew have long break periods between train services a new operator could consider alternatives to the station mess rooms, either using alternative facilities in the local area or at the depot, depending on train movements.
- Mess rooms at Stratford International and Ebbsfleet International are shared facilities with Southeastern, EIL (at Ebbsfleet) and NR(HS).
- At Stratford International there is space within the station for the train operator's local station management staff: this could also provide accommodation for station management staff for Ebbsfleet International and Ashford International stations if the new train operator also serves these stations.

HS1 Ltd may need to make changes to the use of existing accommodation to provide space for a new train operator and there may be some specific opportunities to look at existing agreements with existing users of the station, for example, at franchise replacement. In order for HS1 Ltd to develop solutions, a new operator should discuss its specific requirements for on-site staff accommodation with HS1 Ltd.

The charge for the space will be either exclusive if used solely by the train operator or allocated between the train operators sharing the space as set out in Section 10.1.2.

In terms of office space for management and other support functions, there is the potential to develop space at Stratford International station if a new train operator wished to base management and support functions there.

### **7.4. Ticket retailing facilities**

#### **7.4.1. International services**

A new international operator would need to consider its ticket office and ticket machine requirements at each station and discuss these with HS1 Ltd. Train operators should consider likely volumes and hours of usage taking into account the likely impact of new technology such as e-ticketing on ticket sales/collection at stations.

At St Pancras International, Eurostar has a dedicated ticket office opposite international arrivals and ticket machines for the collection of reserved tickets in the ticket office and by the international

ticket gates. HS1 Ltd and EIL are developing plans for remodelling the area opposite the international ticket gates and relocating the Eurostar ticket office to this area: with the advent of a new international operator, space within this area would be allocated for the new operator's ticket facilities.

At both Ebbsfleet International and Ashford International, Eurostar has a dedicated ticketing/check in area and ticket machines for collection of reserved tickets. At both locations, there is space for a further ticket office if required.

At Stratford International there is space reserved for an international ticket office. This is largely prepared for use and would need only furniture and equipment.

#### **7.4.2. Domestic services**

At St Pancras International, tickets and train information for UK services are available from the national rail ticket office on the ground floor of the station. There are fast ticket machines outside this ticket office and beside the domestic concourses.

At Ebbsfleet International and Stratford International tickets and train information for all UK services are available from the Southeastern ticket offices and fast ticket machines.



*Southeastern Highspeed trains at St Pancras International platforms 11 and 12*

### **7.5. Security**

#### **7.5.1. LTSD**

The Land Transport Security Division (LTSD) of the DfT is responsible for counter-terrorist security on the national rail network and Channel Tunnel. See Section 3.3 for more details of the role of LTSD and the approvals required by operators of international train services.



### 7.5.2. Police

British Transport Police (BTP) services for HS1 are procured by HS1 Ltd. Train operators make their own arrangements for policing on trains. Train operators will have an operational interface with BTP at stations and will need to include familiarisation for BTP in their operational planning. The BTP contact is Paul McGregor ([Paul.Mcgregor@btp.pnn.police.uk](mailto:Paul.Mcgregor@btp.pnn.police.uk)).

### 7.5.3. International passenger check-in

At St Pancras International there is one gateline for ticket check and verification, either through automatic gates or by manual check by staff. There are nine automatic gates; six are dedicated to standard class passengers, two to business class passengers and one to staff. Five booths provide space for manual check-in staff if required. There is spare capacity for new operators to use the existing gateline subject to satisfactory agreement about sharing of facilities.

EIL is currently responsible for its own check-in process and owns the gateline equipment and software. The current software is specific to Eurostar tickets. Under the future proposals currently under discussion:

- HS1 Ltd would take over responsibility from EIL by providing a system suitable for all operators, either with new equipment or with a separate add-on to existing equipment. This would ensure separation of passenger data between operators.
- The check-in channels for standard class and staff would be shared between operators. A premium channel would be made available for new operators.
- HS1 Ltd would provide (manual) check-in staff for a new operator if requested, the train operators would provide customer service staff.

It is intended that similar proposals would be implemented at Ebbsfleet International, Ashford International and Stratford International if there is more than one international operator using these stations.

### 7.5.4. Security screening of international passengers, staff and baggage

The Channel Tunnel (Security) Order 1994 requires passengers, staff and their luggage to be screened. As PIO, EIL is the "Directed Party" for the purposes of security at the international stations - St Pancras International, Ebbsfleet International and Ashford International - in accordance with the Order. This means that EIL has responsibility for maintaining the integrity of the Restricted Zone (the area designated by the Secretary of State as a secure area, the equivalent of airside at an airport). EIL protects the Restricted Zone by applying the mandatory security measures for screening and searching and access control to the RZ including pass issuing. A new operator would be required to work with EIL and to comply with the station security requirements.

EIL subcontracts its physical screening requirements in respect of passengers, staff and their baggage to a third party, however the responsibility for these activities remains with EIL. EIL provides a variety of security screening equipment including X-ray machines, metal detectors etc. and is responsible for their upkeep. There are separate screening facilities for unaccompanied baggage. Staffing levels are managed according to train loading projections. The existing facilities have some spare capacity for new operators (subject to current DfT security requirements being maintained).

EIL currently manages the issuing of security passes which authorise access to the RZs of international stations. Only those persons with legitimate rights to enter the RZ will be issued with a pass (EIL employees for instance would be issued with a permanent pass, and others with passes valid for shorter periods). A pass does not exempt a person or their personal items or equipment from the need to pass through security checks when entering the RZ. International train crew reporting for duty at either the station or a depot must also be security checked.

Under the future proposals responsibility for security screening on behalf of all international operators could either remain with EIL or be transferred to HS1 Ltd, depending on a range of factors including cost efficiency and new operator requirements. Any change to the Directed Party would be a matter for consideration by the DfT.

Security arrangements for any international services intending to use Stratford International would need to be agreed with DfT.

As noted in Section 3.3, a new operator through the Channel Tunnel will be responsible for providing consistent measures at all other stations where passengers board its trains.

#### **7.5.5. Security search of international trains**

International trains are security searched according to the requirements of the Channel Tunnel (Security) Order 1994, to ensure the train does not contain any items that could be considered a threat to the Channel Tunnel before train boarding commences.

EIL is responsible for the security screening of its trains. A new operator (or its contractor) would be required to screen its own trains. They would be subject to the same requirement at all origin stations and at depots.

#### **7.5.6. Security of supplies**

There are specific requirements relating to catering for international trains and supplies delivered to the shorebase (see Section 7.7). Catering providers are directed to comply with security requirements in their own right. DfT can provide further information on the security requirements for catering supplies to international train operators.

### **7.6. Border control**

The UK Border Force is responsible for securing the UK border at international rail stations, air and sea ports and for controlling migration to the UK, enforcing immigration and customs regulations. See Section 3.4 for more details of the role of the UK Border Force and approvals required by operators of international train services.

For passengers travelling from the UK to Belgium or France, immigration entry checks into the Schengen Area take place at juxtaposed controls before boarding the train in the UK. For services to France these are carried out by the Police Aux Frontières (PAF), the French border police, which also carries out checks on services to Brussels on behalf of the Belgian border authorities. Schengen entry check requirements for new services particularly where these do not include a first stop in France remain to be determined.

The IZs at all HS1 stations include space and facilities for UK Border Force and Police Aux Frontières (PAF) to carry out immigration and customs checks. Presently EIL liaises with these authorities over resourcing.

When new operators commence services, responsibility for liaison with the border authorities regarding operations at HS1 stations would remain with EIL as PIO. At Stratford International, this would be the responsibility of the new operator, in its role as PIO at this station.

Each train operator will be responsible for its own compliance with UK Border Force requirements (see Section 3.4).

## **7.7. Catering shorebase**

At St Pancras International Station there is a logistics facility within the RZ for catering supplies, which arrive pre-loaded onto trolleys and are stored for a short period in the shorebase prior to delivery to the train. The facility is currently managed by EIL.

EIL is contracted to procure provision of certain logistics services for other train operators as part of its lease. It is, however, proposed that HS1 Ltd would take on the management of the limited space, contracting a logistics provider to operate the shorebase, providing the service on behalf of all international train operators.

## **7.8. Other RZ facilities and services**

### **7.8.1. Business lounge**

New operators should discuss their business lounge requirements with HS1 Ltd in terms of expected volume of usage, timings etc. There will be an operator-specific charge for this facility.

EIL has a dedicated business lounge in the RZ at each of the three HS1 stations that it uses. The current position is that EIL will retain exclusive use of these business lounges.

At St Pancras International, HS1 Ltd would aim to provide an additional business lounge if required by new train operators but space within the RZ is very limited and potential options outside the RZ may need to be pursued. Space is also limited at Ebbsfleet International. At Ashford International and Stratford International there is space for a new business lounge if required.

### **7.8.2. Customer information**

At St Pancras International there are two customer information desks in the RZ which are currently used by EIL. One will be allocated to new operators (who will share a desk if necessary). Customer information desks will also be made available for new operators at the other HS1 stations.

EIL is currently responsible for customer information screens and announcements in the RZ. The screens are owned by a third party, with an option for their purchase, and are fed by information from EIL's St Pancras control room. It is proposed that the hardware would be transferred to HS1 Ltd in the future.

HS1 Ltd operates a “quiet” station with announcements made only for security reminders and specific operational reasons, rather than on a routine basis. Generic station announcements are in English. However, arrangements could be made for train operators to deliver specific messages in the appropriate language.

### **7.8.3. Passenger boarding and train despatch**

#### **Passenger boarding**

EIL controls passenger access to platforms and provides assistance in boarding trains for Eurostar passengers. A new train operator would be responsible for carrying out its own processes. If part-time staff are required by the train operator, they could be contracted on a commercial basis from another train operator.

#### **Train despatch**

EIL is currently responsible for the operational control of the last 5 minutes before train departure – ensuring passengers are boarded safely and the platform is clear, giving the train authority to depart. This requires several platform staff for 400m trains. Under current proposals each train operator will carry out its own train despatch processes. If part-time staff are required by the train operator, they could be contracted on commercial basis from another train operator whose safety certificate covers train despatch or from NR(HS).

Note that a train operator will have to include its plans for train despatch in its safety certificate application (see Section 4).

### **7.8.4. Command and control**

Ashford AFC is the traffic control, signalling control, electrical control and communication centre for HS1. International station processes are controlled from EIL’s St Pancras control room which liaises with the Ashford AFC on platform allocation. It is proposed that platform allocation should transfer to the HS1 control room at Ashford with station control remaining the responsibility of the PIO.

HS1 Ltd will find space within the station for an operational control base for a new international operator. This is likely to be within the NR station control room.

In times of serious disruption EIL will share its control room with other operators in order to provide closer integration. Protocols will be agreed on operational priorities and disruption processes as part of the train operator’s operational planning.

#### **Summary of web links**

Annexes to the St Pancras International Station Access Conditions

[http://highspeed1.co.uk/media/8221/st\\_pancras\\_international\\_station\\_annexes\\_to\\_hs1\\_station\\_access\\_conditions\\_-\\_december\\_2012\\_version\\_final\\_.pdf](http://highspeed1.co.uk/media/8221/st_pancras_international_station_annexes_to_hs1_station_access_conditions_-_december_2012_version_final_.pdf)

## 8. Depots and other facilities

HS1 Ltd does not control any train maintenance depots but will assist a new operator in identifying maintenance, servicing and stabling solutions and can facilitate depot tours and meetings for a new operator. The new operator will need to provide HS1 Ltd with details of its requirements including train type, maintenance and stabling needs and any special requirements.

New operators will need to enter into a depot access agreement with any depot facility owner whose services they may wish to use. Any facilities used by an international operator will need to comply with the requirements of the Channel Tunnel Security Order 1994.

HS1 Ltd recognises that the availability of depot facilities off HS1 is currently limited and has engaged consultants to provide advice on feasible locations across the HS1 network that will satisfy likely future demand for such facilities, making assumptions around the number and type of rolling stock. The consultants are due to report by June 2013. The study will provide a significant amount of information about potential sites, the costs of development, the capabilities of each site, and the timeframes associated with development. This will facilitate discussions with potential operators. We are keen to discuss likely requirements of operators at an early stage so that we can either feed these into the study and/or make sure that the conclusions can be tailored in the most helpful way.

Facilities adjacent to HS1 are described below.

### 8.1. Temple Mills depot

EIL is the depot facility owner of Temple Mills depot which has facilities for berthing, light servicing, light and heavy maintenance of train sets which are compatible with Class 373 units. EIL is currently modifying the depot to also provide servicing and maintenance facilities for Siemens e320 train sets.



*Temple Mills depot*

The depot is connected to HS1 infrastructure via a bi-directional single line chord accessible from Stratford International Station. The depot infrastructure comprises a train maintenance facility (8 bays), carriage wash and tanked service facilities (effluent discharge and clean water), accommodation block, stores, wheel turning facility and associated track, signalling and overhead catenary systems to access the train maintenance facility.

EIL currently provides some stabling for the domestic high speed trains at Temple Mills.

EIL has made commitments to the EC to allow access for other international operators to stabling, servicing, cleaning and light maintenance services in its depots. These commitments are monitored by the UK Monitoring Trustee (see Section 3.5).

## **8.2. Other facilities**

The domestic trains in use on HS1 are maintained at Ashford Depot, the depot facility owner is Hitachi Europe Limited. The depot has facilities for berthing, light servicing, light and heavy maintenance of train sets which are compatible with Class 375, 395 and 465 units. This depot is third rail accessible only (no overhead supply).

Ripple Lane exchange sidings are part of HS1 and provide access to the neighbouring Ford and Hanson depots and to the NRIL network.

Dollands Moor freight yard is near Folkestone in Kent. The facility owner is DB Schenker Rail (UK) Limited (DBS).

The HS1 Emergency Access Code grants train operators permission to use facilities on HS1 (e.g. sidings, freight loops, stations other than those normally called at by the train operator) and Temple Mills depot in case of an emergency on HS1.

## 9. Required HS1 contracts

### 9.1. Access Agreements

#### 9.1.1. Passenger and Freight Track Access

All passenger and freight train operators planning to operate services on HS1 must enter into a track access contract with HS1 Ltd; this defines the conditions, standards, charges, etc. under which track access is provided to train operators. A Framework Track Access Agreement (FTAA) is a track access contract covering reservation of capacity for more than one year and is subject to ORR approval. A Track Access Agreement (TAA) covering a period of one year or less does not require ORR approval.

The [HS1 Passenger Access Terms](#) (common to all passenger operators) and [HS1 Freight Access Terms](#) (common to all freight operators) set out the majority of the contractual terms including the generic terms of the charging regime, the performance regime and the possessions regime.

Each Passenger or Freight FTAA/TAA incorporates the HS1 Passenger Access Terms or HS1 Freight Access Terms and the HS1 Codes that govern operational arrangements (see Section 9.2). It also includes the following operator-specific elements which will need to be agreed between HS1 Ltd and the train operator:

- Start and end dates of the agreement<sup>26</sup>;
- The routes over which the operator will operate;
- The charging basis;
  - For passenger services the chargeable journey time and charge per minute for each service group (including any IRC discount agreed);
  - For freight services the relevant distance and charge per km for each service group;
- The firm train slots (in terms of daily quantum rather than specific train slots) and station calls (for passenger services) and the rolling stock to be used; and
- The performance regime thresholds and payment rates.

The workstreams which will need to be undertaken to populate the FTAA/TAA are set out in the table below.

Workstream	Timescale	Outputs
Timetable development (see Section 11)	At least 2 years	<ul style="list-style-type: none"> <li>• Routes</li> <li>• Chargeable journey time (passenger services) or relevant distance (freight services)</li> <li>• Firm train slots</li> <li>• Station calls</li> </ul>
Discount application (see Section 10.2)	At least 4 months	<ul style="list-style-type: none"> <li>• IRC discount (passenger services)</li> </ul>

<sup>26</sup> ORR's policy on the duration of track access contracts is regulated by the Access and Management Regulations 2005. In general, most access contracts are for between five and 10 years.

Workstream	Timescale	Outputs
Rolling stock modelling (for new rolling stock types)	3-6 months	<ul style="list-style-type: none"> <li>• Variable element of OMRC</li> <li>• Traction electricity consumption rate</li> </ul>
Performance regime recalibration (see Section 10.3)	3-4 months	<ul style="list-style-type: none"> <li>• Performance regime payment rates and thresholds</li> </ul>

The first task would be to commence discussions on timetables. However, if the new operator intends to apply for a discount it is likely that this will be done in parallel with timetable discussions as both elements will be important for the development of a new operator’s business case.

The drafting of the FTAA/TAA to reflect the outcome of these workstreams will take around 8 weeks, allowing time for pre-industry consultation. The FTAA would then be submitted to the ORR for approval (see Section 3.1.2).

It should be noted that the platforms at Ashford International station are accessed via NRIL infrastructure. Any train operator intending to call at Ashford International would therefore need a TAA with NRIL.



*St Pancras International station, Pancras Road entrance*



### 9.1.2. Station Access

All passenger train operators need to enter into Station Access Agreements (SAAs) with HS1 Ltd for each of the HS1 stations they wish to use. These define the conditions, standards, charges, etc. under which station access is provided to train operators. SAAs are not subject to approval by the ORR. HS1 Ltd will liaise with DfT (as the ultimate landlord of HS1 facilities) in respect of establishment of SAAs.

The [HS1 Station Access Conditions](#) (SACs) are common to all passenger operators and include most of the contractual terms for station access including the basis on which the station access charges are calculated and apportioned between the train operators using the station. There are Annexes to the SACs for each station which cover the details relevant to the specific station, such as a station plan and a description of the station's facilities.

Each SAA incorporates the SACs and relevant annexes. Each SAA also includes the operator-specific elements as follows:

- Start and end dates of the agreement (the duration of each SAA normally matches the duration of the train operator's FTAA);
- The percentage of common station charges payable by the operator for each of the zones within the station; and
- Any exclusive station services to be provided to the operator.

The introduction of a new train operator to a station would require HS1 Ltd to consult with existing train operators using the station in line with the change processes set out in the SACs. Once HS1 Ltd and the new train operator have agreed the access to facilities and services required by the new train operator, HS1 Ltd will submit a proposal for change to the other train operators using the station. A minimum of 45 days is allowed for objections. If objections are raised a reasonable period must be allowed for consultation.

A new domestic operator wishing to use the domestic part of Ashford International station would have to have an SAA with the Station Facility Owner, currently LSER. In this case station access is regulated by ORR.

## 9.2. HS1 Codes

The [HS1 Codes](#) - HS1 Network Code, HS1 Emergency Access Code, HS1 Performance Data Accuracy Code and the HS1 Systems Code - describe the operational arrangements applicable to HS1. They are incorporated as part of each FTAA or TAA.

The HS1 Network Code includes procedures and processes:

- To change the Working Timetable, Engineering Access Statement and Timetable Planning Rules;
- To regulate change to the HS1 Network Code and other operational codes, the network and railway vehicles;
- To establish a performance monitoring system and performance improvement plans;
- To minimise the effect of operational disruption;
- Relating to environmental protection; and

- Relating to dispute resolution.

### 9.3. Insurance

Train operators are required to maintain the insurance as a condition of their operator licence (see Section 3.1.1).

Train operators are required to sign the HS1 Claims Allocation and Handling Agreement (CAHA) which defines the handling of liability claims between train operators and allocates responsibility.

For further details see Section 5 of the HS1 Passenger Access Terms/HS1 Freight Access Terms and Part 5 of the HS1 Station Access Conditions.

#### Summary of web links

Regulatory page of the HS1 website <http://highspeed1.co.uk/Regulatory>

Track – Passenger: <http://highspeed1.co.uk/regulatory/track-passenger/> (HS1 Passenger Access Terms, existing Framework Track Access Agreements)

Track – Freight: <http://highspeed1.co.uk/regulatory/track-freight/> (HS1 Freight Access Terms, Template Framework Freight Track Access Agreement)

Station: <http://highspeed1.co.uk/regulatory/station/> (HS1 Station Access Conditions, Access Conditions Annexes for each of the four HS1 stations)

Codes: <http://highspeed1.co.uk/regulatory/codes/> (HS1 Network Code, HS1 Emergency Access Code, HS1 Performance Data Accuracy Code, HS1 Systems Code)

## 10. Charges

### 10.1. Access charges overview

This section summarises the track and station access charges payable on HS1. For further details please see the [HS1 Network Statement](#) (Section 6 deals with charges) and the [HS1 Passenger Access Terms](#) and [HS1 Freight Access Terms](#) (which provide the contractual detail).

HS1 Ltd is producing an access charging spreadsheet which will allow a potential user to estimate track and station access charges on the basis of existing stock types and estimated frequencies. This will be available on the HS1 website.

#### 10.1.1. Passenger Track Access Charges

The elements of passenger track access charges are:

- Investment Recovery Charge (IRC);
- Operations, Maintenance and Renewal Charge (OMRC);
- Traction Electricity Charge; and
- Other charges (Capacity Reservation Charge, Congestion Tariff, Other Services Charge, Freight Supplement, Carbon Costs)

Each of these is described below. In addition, train operators may receive or make payments under the performance regime which is described in Section 10.3 and may receive payments under the possessions regime as described in Section 10.4.

#### Investment Recovery Charge (IRC)

The purpose of the IRC is to recover part of the capital costs of the construction of the HS1 infrastructure.

IRC is charged on the basis of chargeable journey time on HS1: the chargeable journey time excludes time for stopping at stations. IRC is paid quarterly in advance on the basis of the number of timetabled train paths as set out in the Working Timetable. There are adjustments for additional services operated as a result of subsequent spot bids and services which could not be operated for certain reasons e.g. cancellation by HS1 Ltd.

IRC is capped at £69.57 per minute per train, in February 2009 prices. The cap is indexed every 6 months by RPI, and as of 1 September 2012 is £79.97. The IRC cap and indexation were set in the HS1 Concession Agreement and are not subject to review. HS1 Ltd is permitted to discount below the IRC cap: the HS1 discount policy and the IRC discount schemes currently in operation are described in Section 10.2. With the exception of these discounts the IRC charge is currently set at the cap for both domestic and international passenger services.

The chargeable journey time and the IRC per passenger train service (September 2012 prices) for services currently operating on HS1 are shown in the following table:

	International services from St Pancras	Domestic services from St Pancras to Ashford	Domestic services from St Pancras to Springhead Jn	Domestic services from St Pancras to Ebbsfleet
Chargeable Journey Time	31 minutes	31 minutes	16.5 minutes	14 minutes
IRC per train service (undiscounted)	£2,479.07	£2,479.07	£1,319.51	£1,119.58

### Operations, Maintenance and Renewal Charge (OMRC)

OMRC covers the cost of operating, maintaining and renewing HS1. It is charged on the basis of chargeable journey time on HS1, the chargeable journey time excludes time scheduled for stopping at stations.

OMRC is split into two categories.

1. The majority of the OMRC is approved or determined by the ORR at the start of each five year Control Period and is fixed for the duration of the Control Period, subject to permitted indexation (see Section 10.5.1 below). For the first Control Period (to 31 March 2015) the charge is indexed annually at RPI + 1.1%.

It is paid quarterly in advance on the basis of the number of timetabled train paths with an annual adjustment to reflect the variable costs of additional services operated as a result of spot bids and services which could not be operated for certain reasons e.g. cancellation by HS1 Ltd.

2. The remaining OMRC is made up of the operations, maintenance and renewal costs which are passed through "at cost" to train operators (subject to review by the ORR to confirm that they have been efficiently incurred). For the first Control Period this element includes insurance; rates; non-traction, non-station electricity; and UKPN renewals (renewal of the electricity sub-stations).

Pass through costs are paid quarterly in advance on the basis of the number of timetabled train paths. They are charged on an estimated basis with an annual adjustment to reflect any difference between estimated and outturn costs.

The OMRC per passenger train service as at November 2012, based on the current services operating on HS1, is shown in the following table. The charges shown in this table include both of the elements of OMRC described above.

	International services from St Pancras (Class 373)	Domestic services from St Pancras to Ashford (Class 395)	Domestic services from St Pancras to Springhead Jn (Class 395)	Domestic services from St Pancras to Ebbsfleet (Class 395)
Chargeable Journey Time	31 minutes	31 minutes	16.5 minutes	14 minutes
OMRC per train per minute	£56.38	£43.58	£43.58	£43.58
OMRC per train service	£1,747.78	£1,350.98	£719.07	£610.12

The figures in this table reflect existing vehicle types and journey times. They were also determined on the basis of the number of trains operated by the existing operators. If train numbers for a timetable year deviate from those assumed in calculating the charge by more than 4% (either for a single operator or in total) prices are re-set (see Section 10.5.1). This means that an increase in timetabled trains of more than 4% above the assumed level of 71,143 trains per annum would result in a decrease in OMRC per train service and vice versa.

### Traction Electricity Charge

If traction electricity is procured through HS1 Ltd, then all costs incurred by HS1 Ltd are passed through to the train operators. The charge is the product of the modelled consumption rate (kWh/km), price (p/kWh) and usage (km). The [list of modelled consumption rates](#) (by rolling stock type and stopping pattern) and prices (by month and time period) is published on the HS1 website. Payment of traction electricity charges is made each period in arrears with an annual adjustment to reflect any difference between modelled and actual costs.

If electricity is procured by the train operator, then the written consent of HS1 Ltd must be sought, and the train operator must bear all expenses, payments, liabilities, costs and losses (including transmission losses) with regard to the procurement of traction electricity and of any additional metering equipment or system costs required for implementation and administration.

### Other Charges

Component	Description
Capacity Reservation Charge	<p>Train operators may wish to reserve capacity prior to starting new services (e.g. in order to commit to investing in new rolling stock) by entering into a track access contract with HS1 Ltd.</p> <p>The Capacity Reservation Charge is a charge for capacity that is reserved but not used (i.e. not timetabled). For passenger services, this charge is 25% of the full IRC per train (ignoring any IRC discount).</p> <p>If a train operator surrenders reserved capacity it will be entitled to a rebate of part of its capacity reservation charge if the surrendered capacity is utilised by another train operator.</p>
Congestion Tariff	<p>If at any time HS1 becomes congested (as defined within the Rail Regulations) then HS1 Ltd will consider conducting an auction for capacity, which could give rise to a congestion tariff. Such a tariff would need approval from the SoS and the ORR.</p> <p>There is no charge at present as HS1 is not currently congested.</p>
Other Services Charge	<p>Train operators are liable for the actual costs incurred by HS1 Ltd of any bespoke ancillary services that it provides. There are limited circumstances in which these might arise, but they might include assistance with event planning for example, or any bespoke timetabling assistance over and above the normal process.</p>
Freight Supplement	<p>This charge applies to domestic franchised train operators only. Its purpose is to cover any shortfall in the recovery of costs arising from the freight charging arrangements.</p>

Carbon Costs	<p>The Carbon Costs will be the fair and equitable proportion (as determined by the ORR) of all costs, expenses and any other financial liabilities relating to HS1 Ltd's payments under the Carbon Reduction Commitment Energy Efficiency Scheme.</p> <p>HS1 Ltd made its first payment under this scheme for 2011/12: the CRC payment related to track access charges was £8k.</p>
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*A Eurostar train travelling on HS1 through Kent*

**10.1.2. Station Access Charges**

Costs relating to operating, maintaining and renewing the stations are charged to train operators through either the Qualifying Expenditure (Qx) or Long Term Charge (LTC) mechanisms. The allocation of costs between train operators is governed by the mechanisms in the [HS1 Station Access Conditions](#).

The access charging spreadsheet will allow a new operator to estimate station charges. As a guide to the order of magnitude, an indicative charge for a new international operator at St Pancras International is £0.5 to £1.5 million per annum depending on space taken and vehicles operated.

**Qualifying expenditure (Qx)**

Qx covers the station operating, maintenance and repair expenditure incurred by HS1 Ltd (e.g. costs associated with maintenance, station staff, cleaning, security and utilities).

Qx is determined separately for each station each year and is apportioned between the train operators using the station based on a combination of vehicle departures and the relative size of the international, domestic and common areas at the station.

Best estimates of costs are provided by the station operators (NR(HS) at St Pancras International, Stratford International and Ebbsfleet International and EIL at Ashford International). Payments are based on the annual best estimate with a wash-up every six months to reflect the difference between estimated and actual costs. There is a transparent process through which train operators can challenge the estimated and actual costs.

### **Long Term Charge (LTC)**

This charge covers expected expenditure on asset renewal activities at stations over a 50 year horizon. The principle is that over 50 years, the LTC income will be sufficient to fund the necessary expenditure on these activities. LTC is a fixed annual amount indexed annually by RPI, although the HS1 SACs do allow for changes in certain limited circumstances.

LTC for each station is apportioned between the train operators using the station based on a combination of vehicle departures and the relative size of the international, domestic and common areas at the station.

The LTC amounts are currently under review by the DfT, with the revised charge coming into effect from April 2015. The LTC will be reviewed every five years (see Section 10.5.2).

### **Exclusive Charges**

Any bespoke services provided by HS1 Ltd to a specific train operator at a station will be charged to that operator. These are likely to be limited in practice, for example, extending the opening times of the left luggage facility for one specific operator.

### **Other charges for passenger operators**

As well as the charges for HS1 Ltd services set out above, operators will also face charges for their own services. These include dispatch staff and any customer service personnel the operator chooses to deploy. For international passenger operators there will also be the following categories:

- Security costs – for screening of luggage and passengers, and the cost of securing the RZ; and
- Border Force control costs – although these are not typically recovered from operators but paid for out of the Government department budget.

### **Station performance regime**

The station performance regime measures individual performance downtime events for stated infrastructure items e.g. lifts, escalators and CIS systems. Operators are therefore offered protection from identified major unit failures which would have a detrimental impact on their ability to serve customers. Each performance event downtime is tracked over a 28-day period and where cumulative downtime exceeds the permitted benchmark financial recompense is given to operators who operate from within the specified zone in which the equipment is located.

### 10.1.3. Freight Track Access Charges

The elements of freight track access charges are:

- Freight Operations, Maintenance and Renewal Charge;
- Traction Electricity Charge; and
- Other charges (Capacity Reservation Charge, Congestion Tariff, Other Services Charge, Carbon Costs)

Each of these is described below. In addition, freight train operators may receive or make payments under the performance regime which is described in Section 10.3 and may receive payments under the possessions regime as described in Section 10.4.

Current charges relate to conventional freight services using HS1. Charges for high speed freight will be determined as part of the Periodic Review (see Section 10.5.1).

Unlike passenger operators, freight operators do not pay an Investment Recovery Charge. Should there be any future upgrades to HS1 specifically relating to freight operations, then HS1 Ltd will recover the associated costs from freight operators via an “Additional Investment Recovery Charge”. The size of this charge and the period of time over which the costs are recovered will be subject to ORR approval on a case-by-case basis.

#### **Freight Operations, Maintenance and Renewal Charge (Freight OMRC)**

For conventional freight services, Freight OMRC covers only the operations, maintenance and renewal costs which would not be incurred, or would be “avoidable” in the absence of freight services on HS1.

Freight OMRC is charged on the basis of the distance travelled on HS1 not the time spent on HS1. The current Freight OMRC is £7.13 per train-km in February 2009 prices although this rate is expected to change in early 2013 when the ORR review of freight avoidable costs on HS1 is concluded. For freight services operated on HS1 at night this charge is discounted to £4.00 per train-km (February 2009 prices) until 31 March 2015. Between now and the end of the current Control Period (31 March 2015) these rates will be subject to indexation of RPI +1.1%. These rates are based on the type of rolling stock currently using HS1.

Freight OMRC is paid each period in arrears on the basis of number of timetabled trains plus spot bids.

#### **Traction Electricity Charge**

Traction electricity charges for freight operators are determined on a similar basis to those for passenger operators (see Section 10.1.1). The differences are as follows:

- The freight traction electricity charge is the product of the modelled consumption rate (kWh/gross tonne-km), price (p/kWh) and usage (gross tonne-km); and
- The [list of freight consumption rates](#) is by number of locomotives and section of HS1 route.



## Other Charges

Component	Description
Capacity Reservation Charge	Train operators may wish to reserve capacity prior to starting new services. The Capacity Reservation Charge is a charge for capacity that is reserved but not used (i.e. not timetabled). For freight services, this charge is 25% of the variable element of the Freight OMRC per train.
Congestion Tariff	If at any time HS1 becomes congested (as defined within the Rail Regulations) then HS1 Ltd will consider conducting an auction for capacity, which could give rise to a congestion tariff. Such a tariff would need approval from the SoS and the ORR. There is no charge at present as HS1 is not currently congested.
Other Services Charge	Train operators are liable for the actual costs incurred by HS1 Ltd of any bespoke ancillary services that it provides. This includes, for example, event planning.
Carbon Costs	The Carbon Costs will be the fair and equitable proportion (as determined by the ORR) of all costs, expenses and any other financial liabilities relating to HS1 Ltd's payments under the Carbon Reduction Commitment Energy Efficiency Scheme.

## 10.2. IRC discount policy

This section provides a brief summary of HS1 Ltd's discount policy. For further details please see the [HS1 Network Statement](#) Appendix 3.

In certain circumstances, HS1 Ltd will consider offering a discount in respect of the IRC element of access charges. Any discount will be aimed at encouraging the development of services that would not otherwise be viable, in order to improve the utilisation of HS1.

The HS1 Discount Policy was established following industry consultation and forms part of the HS1 Network Statement. The key terms of any agreed discount schemes will also be published in the HS1 Network Statement. The HS1 Discount Policy sets out:

- The principles for the application of discounts on HS1:
  - Discounts will be offered on a fair, transparent and non-discriminatory basis;
  - Specific criteria will be applied in order to determine whether or not a discount will be offered;
  - The criteria will be based on identifying rail services, rather than traffic flows;
  - Discounts should not prevent best use being made of HS1 capacity;
  - HS1 Ltd's commercial interests, as a private company with responsibilities to its shareholders, need to be protected; and
  - Discounts will be time-limited.
- The discount criteria and the process that HS1 Ltd will follow in considering whether to offer an IRC discount. This is based on the discount application satisfying a series of seven tests.

- The application process to be followed by train operating companies in applying for discounts, including a summary of the information and supporting analysis to be provided. Information provided by train operators in support of discount applications will be held in confidence by HS1 Ltd except if required to be released to the ORR as part of the approval process.

The discount application process includes the following steps:

- Informal discussions between the train operator and HS1 Ltd;
- Formal application to HS1 Ltd;
- HS1 Ltd indicative response and consultation;
- HS1 Ltd decision; and
- Request for ORR approval of track access agreement including the discount.

HS1 Ltd expects the process to take at least four months from initial discussions with an operator to submission to ORR of a track access agreement including the discount. In practice, the process is likely to take longer than this as the initial discussions around a possible discount will be linked to the development of an operator's business case. There will be an iterative process as HS1 Ltd's approach will depend on the nature of the business case: HS1 Ltd will not give a discount unless it is necessary to make the train operator's business case viable, and it is in HS1 Ltd's commercial interest to give the discount.

While there is no specific limit on the duration of a discount, in practice we would not typically expect it to be longer than five years. As a rule of thumb, we would typically expect an operator to commit to minimum service levels for a period roughly twice as long as the discount period itself in order to satisfy the test of the discount being in HS1 Ltd's commercial interest. We would also expect the discount to be profiled in the same way as the train operator's business case.

Because of these considerations, it will be helpful to both HS1 Ltd and prospective operators to have early discussions around discounts.

Any discounts agreed between HS1 Ltd and a train operator will be reflected in FTAA's which must be approved by the ORR.

The key terms of agreed discount schemes are also published in Section 6 of the HS1 Network Statement. Discounts are currently being offered for services between:

- St Pancras International and Marne-la-Vallée; and
- St Pancras International and Brussels Midi.

HS1 Ltd can only offer a discount on HS1 infrastructure. Train operators must discuss charges for other rail networks with the relevant infrastructure managers.

While HS1 Ltd currently provides a discount on OMRC for freight services at night, any shortfall in the recovery of costs as a result this discount is compensated for by a freight supplement on franchised passenger train operators on HS1. It is HS1 Ltd's policy not to offer OMRC discounts for passenger operators as this would risk the under-recovery of costs for the operation, maintenance and renewal of HS1.

### 10.3. Performance regime

HS1 Ltd has established a performance regime to incentivise all parties to minimise disruption and improve performance. This section provides a brief summary of the performance regime. For further details please see the HS1 Network Statement Appendix 2.

Performance is measured using the TRUST<sup>27</sup> monitoring system (as used on NRIL network), with responsibility for delays and cancellations attributed in accordance with the [Delay Attribution Guide](#) published by the Delay Attribution Board.

Under the performance regime, delays and cancellations experienced by each train operator are measured in average minutes delay per train for each 28 day period. Payments are made under the following scenarios:

- A train operator will receive a payment from HS1 Ltd if HS1 Ltd attributed delays and cancellations experienced by the train operator exceed a Poor Performance Threshold;
- Each train operator will make performance payments in respect of the delays and cancellations which it causes to another train operator, subject to the overall performance experienced by the other train operator being worse than a defined benchmark; and
- A train operator will pay a bonus to HS1 Ltd if delays and cancellations experienced by the train operator (caused either by HS1 Ltd or by another train operator) are better than a Good Performance Threshold.

The performance regime is incorporated in the HS1 Passenger Access Terms and HS1 Freight Access Terms. Payment rates and benchmarks for individual operators are set out in their FTAA or TAA.

Payment rates are standardised for particular traffic types (international passenger services, domestic passenger services, freight night services). There are annual and quarterly caps on performance payments which apply to both HS1 Ltd and the train operator. The annual caps are as follows:

- For payments by HS1 Ltd to each individual passenger train operator, there is an annual cap of 3% of total IRC and OMRC payable by the train operator, subject to a minimum of £500,000 (in February 2009 prices, indexed by RPI). The same cap applies to payments made by each passenger train operator in respect of delays and cancellations caused to other train operators;
- For payments by HS1 Ltd to each individual freight train operator there is an annual cap, from 2013/14 onwards, of 3% of total Freight OMRC payable by the train operator, subject to a minimum of £500,000 (indexed) (for 2012/13 the amounts are 1.5% and £250,000 respectively). The same cap applies to payments made by each freight train operator in respect of delays and cancellations caused to other train operators;
- The annual caps for bonus payments payable to HS1 Ltd are 10% of the payment caps above.

Historically, HS1 Ltd has been a net payee, though the payments have been significantly lower than the caps.

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<sup>27</sup> TRUST is the NRIL system which identifies the occurrence of train delays and allows for the explanation and attribution of the train delays

The performance regime can be reviewed after a material change or if another train operator's performance regime is revised. A material change for this purpose would include a physical modification to HS1, an increase or decrease of more than 4% in the number of train movements or a significant change in the performance of the rolling stock operated by the train operator.

The performance regime parameters in the HS1 Freight Access Terms are based on modelled performance. Once sufficient historical data is available these parameters will be recalibrated on the basis of actual performance data.



*Clock at St Pancras International station*

#### **10.4. Possessions regime**

The possessions regime is part of the HS1 Passenger Access Terms and HS1 Freight Access Terms.

The possessions required by HS1 Ltd in order to carry out inspections, maintenance, repair, renewal and enhancement works on HS1 are set out in the Engineering Access Statement. If possessions are taken in excess of the possessions allowance, train operators will be entitled to be reimbursed for their direct costs arising as a result of such possessions. There is an annual cap on payments by HS1 Ltd to train operators under the possessions regime as follows:

- For each passenger train operator there is a cap of 1% of total IRC and OMRC payable by the train operator; and
- For each freight train operator there is a cap of 1% of total Freight OMRC payable by the train operator.

To date, no payments have been made under the possessions regime.

## 10.5. Future changes to charges

This section summarises the review processes which could lead to changes in track and station access charges in the future.

### 10.5.1. Track Access Charges

#### Periodic Review

The OMRC element of track access charges is subject to periodic review by the ORR. Each Periodic Review covers a five year Control Period. HS1 Ltd's first Control Period (CP1) ends on 31 March 2015. The 2014 Periodic Review (PR14) will cover the period from 1 April 2015 to 31 March 2020, Control Period 2 (CP2).

In each Periodic Review, HS1 Ltd is required to propose an efficient level of cost for the operations, maintenance and renewal of the infrastructure and the corresponding OMRC for the Control Period. The ORR will either approve or determine the costs and level of OMRC.

The charges for high speed freight will be determined as part of the PR14 process. PR14 will also consider the conventional freight discount at night which currently ends on 31 March 2015.

The steps and timings for the PR14 process are follows:

Dates	Activity
	Industry consultation on draft HS1 Ltd submission to ORR utilising stakeholder sessions to formulate submission
December 2013	HS1 Ltd submission to ORR
December 2014	Latest date for ORR decision
April 2015	New charges take effect

As noted in Section 10.1.1 above, once the OMRC is approved or determined by ORR, the train operators are largely insulated from any overruns in operation, maintenance and renewal costs (although not from ancillary costs such as rates and insurance).

#### Interim Review

Certain changes to the number of timetabled trains will trigger a reapportionment of OMRC between operators and consequent changes to the OMRC per minute values. These changes (a "Review Event" in the track access agreements) are defined as follows:

- A change of at least 4% (increase or decrease) in total timetabled trains on HS1 for a new timetable period (compared with total timetabled trains at the last calculation of OMRC); or
- A change of at least 4% in any individual train operator's timetabled trains on HS1.

In this case HS1 Ltd will reapportion operations, maintenance and renewal costs between train operators in line with the process set out in the HS1 Passenger Access Terms and HS1 Freight Access Terms. An increase (of more than 4%) in timetabled trains would result in a decrease in OMRC per train service and vice versa.

HS1 Ltd may also apply to ORR for an interim review of OMRC in the event of a material change between periodic reviews. The ORR would expect a request for such a review to be supported by strong evidence as to why such a review is required, and why the issue cannot wait until the next periodic review.

**Sharing of Operator Agreement outperformance**

NR(HS) maintains and renews the HS1 route under the Operator Agreement with HS1 Ltd. The majority of the OMRC charged to train operators relates to the recovery of costs incurred by HS1 Ltd under this agreement.

The Operator Agreement includes a mechanism under which NR(HS) will share financial outperformance in CP2 (2015-2020) and CP3 (2020-2025). In the last three years of each of these Control Periods 30% of any financial outperformance will be shared between the passenger train operators using HS1 in proportion to the OMRC paid by each operator.

**IRC**

IRC is not subject to periodic review.

Over the life of the concession, further investment in HS1 or related facilities may be required. In this case, HS1 Ltd may seek to charge a further IRC to recover the costs associated with that additional investment. This further IRC – including the size and duration of payments – would be subject to approval by the ORR.

**10.5.2. Station Access Charges**

**LTC Review**

Station assets are overseen by the Secretary of State and station access charges are not subject to the ORR periodic review process.

However, there is a parallel process of LTC reviews covering the same five year control periods as the periodic reviews of track access charges. The DfT role in the LTC review will be similar to the role of the ORR in the periodic review of track access charges.

The formal steps and timings for the current LTC review process are set out in the following table. There will also be ongoing stakeholder engagement throughout the process.

<b>Dates</b>	<b>Activity</b>
January 2014	Industry consultation on draft HS1 Ltd submission to DfT
June 2014	HS1 Ltd submission to DfT
October 2014	DfT decision
April 2015	New charges take effect

**Summary of web links**

Regulatory page of the HS1 website <http://highspeed1.co.uk/Regulatory>

Network Statement <http://highspeed1.co.uk/regulatory/network-statement/> (Section 6 deals with charges)

Track – Passenger: <http://highspeed1.co.uk/regulatory/track-passenger/> (HS1 Passenger Access Terms, List of electricity consumption rates and prices for passenger services)

Track – Freight <http://highspeed1.co.uk/regulatory/track-freight/> (HS1 Freight Access Terms, Freight electricity consumption rates and prices)

Station <http://highspeed1.co.uk/regulatory/station/> (HS1 Station Access Conditions)

## **11. Timetable Planning**

### **11.1. Timetable development**

#### **11.1.1. Informal process**

Significant timetable change may require discussion between train operators and HS1 Ltd over a period of several years. At least two years before a change in or addition to the passenger timetable, HS1 Ltd will commence discussions with new and existing train operators regarding their aspirations for the train services that they wish to operate and will commence preparation of the timetable. New train operators are encouraged to contact HS1 Ltd as early as possible to discuss their timetable aspirations.

Although there may be several infrastructure managers along the route of a proposed international service, pathing of the proposed services for the whole route can be coordinated through HS1 Ltd or any other One Stop Shop (OSS) using the RNE Path Coordination System (PCS).

The aim is to give an early indication of the availability of capacity to a new train operator before the operator commences significant capital investment (for example rolling stock procurement). The infrastructure managers along the proposed route may consider entering into a Memorandum of Understanding with the train operator in relation to provisional paths identified. In such an event, the provisional paths will be subject to the formal timetable development process as described in Part D of the [HS1 Network Code](#).

#### **11.1.2. Formal timetable development process**

Part D of the HS1 Network Code sets out the procedures by which changes to the Working Timetable, the Engineering Access Statement and the Timetable Planning Rules may be made. The Engineering Access Statement and Timetable Planning Rules detail the anticipated requirements for restrictions of use needed to undertake maintenance, renewal and enhancement works on HS1 during the period of operation of the Working Timetable.

Significant changes in the passenger timetable may be made only twice a year, at the Principal Change Date (in December) and the Subsidiary Change Date (in May).

The main stages in the timetable development process are set out in the table below (the dates shown refer to the number of weeks before a timetable change date e.g. D-22 is 22 weeks before the timetable change date). For full details of the process see Part D of the HS1 Network Code.



<b>Dates</b>	<b>Process or Milestone</b>
D-90 to D-44	Revision of Timetable Planning Rules and Engineering Access Statement in consultation with train operators
D-55	Any train operator wishing to introduce significant new services or to make significant changes to its services shall consult with HS1 Ltd as early as possible and, where possible, before D-55. If HS1 Ltd considers this may necessitate substantial timetable changes it may commence the Initial Consultation Period (below) before D-55.
D-55 to D-36	<b>Initial Consultation Period</b> Train operators discuss their proposals with HS1 Ltd which carries out a consultation and facilitation process with other train operators.
By D-48	<b>Provisional International Paths</b> are established in co-operation with other relevant infrastructure managers and included on a provisional basis in the New Working Timetable. In the subsequent timetabling process <b>these will only be adjusted if absolutely necessary</b> . HS1 Ltd will also use reasonable endeavours to ensure that provisional domestic paths have been established in cooperation with NRIL and included on a provisional basis in the New Working Timetable.
D-36	<b>Priority Date</b> Train operators set out their requirements in an Access Proposal. Access Proposals submitted by D-36 are given priority in the compilation of the New Working Timetable.
D-36 to D-22	<b>Timetable Preparation Period</b> HS1 Ltd compiles the proposed New Working Timetable.
D-22	<b>New Working Timetable published</b> There is an appeal period of 4 weeks.
D-0	New timetable starts

As a result of preliminary discussions between HS1 Ltd and existing and future operators, it is expected that most timetable disputes will be resolved by negotiation and agreement during the early stages of the timetabling process. However, provision is made for train operators to appeal against HS1 Ltd decisions in accordance with the Dispute Resolution Procedure.

### 11.1.3. Freight catalogue paths

Current freight operations on HS1 are under a short term Track Access Agreement (duration less than one year) which gives the train operator a contingent right (not a firm right) to spot bid for train paths on HS1 at night. A catalogue path system will take effect for freight operators when they have entered into a Framework Track Access Agreement: this will allow freight operators to bid for train paths in the catalogue. HS1 Ltd is currently in dialogue with the freight operators.

### 11.2. Preview services

A new operator may wish to consider a staged introduction of its service, commencing with a limited frequency “preview” service. This could provide a learning environment for the train operator from both operational and customer viewpoints before the launch of its full service.

This approach was taken for LSER’s domestic high speed service. The full service was introduced in December 2009, after a six month period of lower frequency preview services during which service levels were built up and changes were made to destinations served and train lengths.

### 11.3. Decision Criteria

Part D of the HS1 Network Code sets out the Decision Criteria which HS1 Ltd must apply in the case of competing or conflicting requests for capacity.

Most importantly, HS1 Ltd shall first reflect the following order of priority in the allocation of capacity (in accordance with the “Declaration of Specialised Infrastructure”):

1. High speed international passenger trains;
2. High speed domestic passenger trains;
3. High speed freight trains; and
4. Other trains.

If there are still competing demands within the same “tier” of the order of priority, HS1 Ltd will apply further considerations to prioritise requests for capacity within that “tier”. In particular, the prioritisation should take into account the complexity of assembling a contiguous train path across HS1 and other networks, with reference to the number of networks crossed and operational complexities.<sup>28</sup>

Other considerations which should be taken into account include the capability of the HS1 network, train service performance, journey times, the spreading of services to reflect demand, the efficient use of assets and transport integration.

### 11.4. Availability constraints

Restrictions on the availability of HS1 infrastructure are set out in the Engineering Access Statement.

The current maintenance regime has line blocks as set out in the table below. Exact timings depend on the location of the work site. Timings are reviewed and revised (if applicable) each timetable year through the Part D process (see above).

Day of week	Single or double line block	Approximate timing
Monday to Friday	Single	00:55 to 05:05
Saturday	Double	00:55 to 06:30
Sunday	Double	00:55 to 05:05

#### Summary of web links

HS1 Network Code <http://highspeed1.co.uk/regulatory/codes/> – Part D deals with Timetable Change  
 RailNetEurope and One Stop Shops <http://www.rne.eu/>

<sup>28</sup> This consideration was introduced in the December 2012 version of the HS1 Network Code.

## 12. Environmental sustainability

HS1 Ltd is committed through the [HS1 Sustainability Policy](#) to environmental sustainability and to ensuring environmental considerations are integrated into our business decision making. The HS1 Sustainability Plan sets out HS1 Ltd's approach to achieving this and contains objectives and targets in the following key areas:

- Energy;
- Biodiversity;
- Management Systems;
- Waste;
- Water and Procurement; and
- Rail Sustainability.

Progress towards achievement of these objectives and targets is reviewed and reported regularly. The HS1 Sustainability Plan itself is regularly reviewed to ensure continual improvement.

Delivery involves all stakeholders and cooperation with NR(HS), train operators and station retailers in order to achieve established targets. This is coordinated through the HS1 Sustainability Forum. New train operators will be expected to support HS1 Ltd in delivery of its objectives, in particular, to develop and keep updated a Sustainability Policy, a Sustainability Plan and an environmental management system and to participate in the HS1 Sustainability Forum.

### Summary of web links

HS1 Ltd Sustainability Policy

[http://highspeed1.co.uk/media/10355/hs1\\_ltd\\_sustainability\\_policy\\_2011\\_april.pdf](http://highspeed1.co.uk/media/10355/hs1_ltd_sustainability_policy_2011_april.pdf)



*North Downs Portal*

## 13. Next Steps

We would be happy to discuss any prospective train operator's plans or proposals and provide further information on HS1.

Please contact:

Wendy Spinks, Head of Revenue Development

HS1 Limited


12th Floor

One Euston Square

40 Melton Street

London NW1 2FD

 [wendy.spinks@highspeed1.co.uk](mailto:wendy.spinks@highspeed1.co.uk)

 020 7014 2716

We recognise that a prospective train operator may wish to keep its approach and initial discussions with HS1 Ltd confidential and we are therefore willing to sign a confidentiality agreement to ensure that all discussions and information provided to HS1 Ltd are kept confidential.

Whilst all the information provided in this Guide is publicly available, HS1 Ltd may require an interested party to also sign a confidentiality agreement before providing additional information which may not be currently in the public domain.

We intend to update this guide as required to reflect further developments. If you have any comments or suggestions for improvement please feel free to contact us with your feedback.

## Appendix 1: Glossary of Terms

Ashford AFC	The traffic control, signalling control, electrical control and communication centre for HS1
ATP	Automatic Train Protection
AWS	Automatic Warning System used on NRIL infrastructure
BTP	British Transport Police
CAHA	Claims Allocation & Handling Agreement
Class 373	The classification given to the TGV-TMST trains currently used by Eurostar
Class 395	The classification given to the Hitachi A-trains used for the HS1 domestic service operated by LSER
Class 92	The classification given to an electric locomotive designed to operate services through the Channel Tunnel and on the GB rail network
Control Period (CP)	HS1 Control Period, a period of 5 years during which the ORR's regulatory settlement on OMRC applies. The first Control Period ends on 31 March 2015. Each subsequent Control Period is of 5 years duration.
CP2	Control Period 2, April 2015 – March 2020
CP3	Control Period 3, April 2020 – March 2025
CSR	Cab Secure Radio
CTSA	Channel Tunnel Safety Authority
DBS	DB Schenker Rail (UK) Limited
DECC	Department of Energy and Climate Change
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DLR	Docklands Light Railway
e320	High speed EMU train built by Siemens
EIL	Eurostar International Limited
EMU	Electric multiple unit
Engineering Access Statement	The Engineering Access Statement sets out the possessions required by HS1 Ltd in order to carry out inspections, maintenance, repair, renewal and enhancement works on HS1
ERA	European Railway Agency
Eurotunnel	The infrastructure manager of the Channel Tunnel
Freight OMRC	OMRC to be paid by a freight train operator
FTAA	Framework Track Access Agreement. A track access contract for a period of more than one year
GSM-R	Global system for mobile telecommunications - railway
HS1	High Speed 1. The railway between London and the Channel Tunnel including four international stations at St Pancras, Stratford, Ebbsfleet and Ashford.
HS1 Codes	The HS1 Network Code, the HS1 Emergency Access Code, the HS1 Performance Data Accuracy Code and the HS1 Systems Code
HS1 Concession Agreement	The agreement between the Secretary of State and HS1 Ltd granting the concession to HS1 Ltd for the operation and financing of HS1 and the repair, maintenance and replacement of HS1
HS1 Lease	The agreement between the Secretary of State and HS1 Ltd which defines the rights and obligations of HS1 Ltd with regard to land, stations and other property
HS2	High Speed 2. The UK's planned new high speed rail network
IECC	Integrated Electronic Control Centre
IGC	Channel Tunnel Intergovernmental Commission

IRC	Investment Recovery Charge
IZ	International zone in a station
KVB	Controle de vitesse par balises – Speed supervision by beacons
LSER	London & South Eastern Railway Limited
LTC	Long Term Charge
MAA	Moving Annual Average
LTSD	Land Transport Security Division of DfT
NR(HS)	Network Rail (High Speed) Limited, a subsidiary of NRIL
NRIL	Network Rail Infrastructure Limited
NRSP	National Railways Security Programme
NSA	National Safety Authority
NTRs	National Technical Rules
OMRC	Operations, Maintenance and Renewal Charge
ORR	Office of Rail Regulation
OSS	One Stop Shop
PAF	Police Aux Frontières, the French border police
PCS	RailNetEurope’s Path Coordination System
PIO	Principal International Operator
PR14	The 2014 Periodic Review which covers Control Period 2
Qx	Qualifying station operation, maintenance and repair expenditure
RDD	Reference Document Database
RIR	Railways (Interoperability) Regulations 2011
RNE	RailNetEurope, an association of European infrastructure managers and allocation bodies
ROGS	The Railways and Other Guided Transport (Safety) Regulations 2006, as amended
RZ	Restricted zone in a station
SAA	Station Access Agreement
SACs	Station Access Conditions
Secretary of State	Secretary of State for Transport
Section 1	The first section of HS1 which opened in 2003. Section 1 runs between Fawkham Junction/Southfleet Junction and Cheriton (Channel Tunnel Boundary)
Section 2	The second section of HS1 which opened in 2007. Section 2 runs between St Pancras International and Southfleet Junction via stations at Stratford International and Ebbsfleet International.
SFO	Station Facility Owner
SMS	Safety Management System
SNCB	Société Nationale des Chemins de fer Belges, the Belgian national rail operator
SNCF	Société Nationale des Chemins de fer Français, the French national rail operator
SNRP	Statement of National Regulatory Provisions
SoS	Secretary of State for Transport
TAA	Track Access Agreement. A track access contract for a period of up to one year.
Temple Mills depot	The light maintenance depot located at Temple Mills, north of Stratford, London
TPWS	Train Protection and Warning System used on NRIL infrastructure
TSIs	Technical Specifications for Interoperability

TVM 430	The signalling system used on HS1, the Channel Tunnel, TGV Nord and Belgian high speed lines
UIC	Union Internationale des Chemins de fer
UIC GC	The structure gauge to which HS1 is built
UKPN	UK Power Networks Services (Contracting) Limited

## Appendix 2: HS1 Fact Sheet

### OWNERS

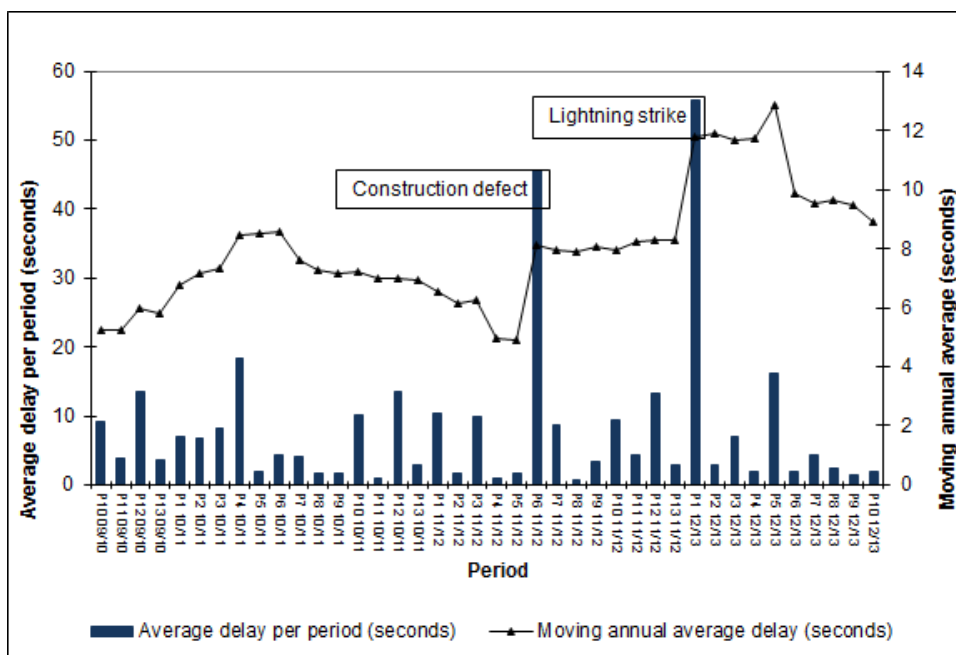
HS1 Ltd is jointly owned by Borealis Infrastructure (50%) and Ontario Teachers' Pension Plan (50%), two Canadian pension funds.

### KEY DATES

- 2003 Completion of Section 1 of HS1 with a connection to London Waterloo station. Eurostar services commenced operating on Section 1 with journey time reduced by 20 minutes.
- 2007 Completion of Section 2 of HS1 linking Section 1 with St Pancras International and the two new international stations at Stratford and Ebbsfleet. Eurostar services started operating from St Pancras International, journey time reduced by a further 20 minutes.
- 2009 Domestic high speed passenger service commenced on HS1. A preview service started in June 2009, with the full service commencing in December 2009.
- 2009 The UK government granted HS1 Ltd a concession to operate, manage and maintain the HS1 assets until 31 December 2040. At this stage HS1 Ltd was a subsidiary of London & Continental Railways (LCR) which was, in turn, owned by the UK Government.
- 2010 The UK Government sold HS1 Ltd to a consortium comprising Borealis Infrastructure and Ontario Teachers' Pension Plan. The sale was completed in November 2010.
- 2012 Start of limited night time freight service on HS1.

### HS1 PERFORMANCE

Delays from infrastructure incidents, from the start of the full domestic service in December 2009.





**SERVICES OPERATED ON HS1**

<b>Type of service</b>	International passenger		Domestic high speed passenger		Conventional freight
<b>Operator</b>	Eurostar International Limited (EIL)		London & South Eastern Railway (LSER)		Deutsche Bahn Schenker (DBS)
<b>Number of services operated</b>	Over 18,000 per year <sup>29</sup>		Financial year 2011/12		From October 2012
			Ashford	25,524	2 return services per week between London and Poland
			Springhead Jn	25,872	
			Ebbsfleet	1,997	
			Total	53,393	
<b>Fastest journey times</b>	London to		St Pancras to		
	Paris	2h16	Ashford	38m	
	Brussels	2h01	Ebbsfleet	17m	
	Lille	1h20			
<b>Rolling stock</b>	Class 373 e320 train sets on order		Class 395 Operated as 6 or 12 car		Class 92 locos
Maximum speed	Class 373 e320	300km/h 320km/h	225km/h		140km/h
Passenger capacity	Class 373 e320	750 seats 900 seats	354 seats per 6-car unit + standing capacity		N/A
<b>Number of passengers carried</b>	2012	9.9 million	2012	9.0 million	N/A
	2011	9.7 million	2011	8.2 million	
	2010	9.5 million	2010	7.2 million	
	2009	9.2 million			
	2008	9.1 million			
	2007	8.3 million			

<sup>29</sup> Based on Eurostar timetable 9 December 2012 to 1 June 2013

## Appendix 3: HS1 Route Fact Sheet

### LENGTH AND GAUGE

Length of HS1 route	109 km
Nominal track gauge	1,435mm
Structure gauge	UIC GC*

\* On the Ashford connecting lines on the NRIL network, the connection to Temple Mills depot from Stratford International station and within Ripple Lane sidings the structure gauge is UIC GB+.

### SIGNALLING SYSTEMS

KVB	A speed supervision and Automatic Train Protection (ATP) system. Used at St Pancras International and its approaches.
TVM 430	An ATP signalling system with an in cab signalling functionality. Used on the rest of HS1 (also on the Channel Tunnel, TGV Nord and Belgian high speed lines).

### POWER SUPPLY

Overhead catenary system compliant with the Energy (High Speed) TSI.

Contact wire height 5.08m above rail level (4.68m through Ashford International station platforms).

Power supply characteristic	Performance
Nominal voltage	25kV
Maximum voltage (continuous)	27.5kV
Minimum voltage (continuous)	19kV
Nominal frequency	50Hz
Maximum fault current	12kA (6kA in St Pancras area)

The power supply at the North Kent line connection, leading into the Hitachi depot at Ashford and the Ashford domestic connecting lines, is through conventional NRIL 750V DC third rail system.

### ROLLING STOCK REQUIREMENTS

	Maximum train length	Maximum Operating Speed		Maximum static load
		Section 1	Section 2	
International passenger trains	400m	300km/h	230 km/h	17t/axle
Domestic passenger trains	276m	140km/h	140 km/h	22.5t/axle
Loco hauled freight trains	750m	140km/h	140 km/h	22.5t/axle

**MAJOR TUNNELS AND VIADUCTS**

<b>Name</b>	<b>Description/location</b>	<b>Length</b>
<b>Tunnels</b>		
London Tunnel 1	Twin bore single track tunnel from St Pancras to Stratford	7.5 km
London Tunnel 2	Twin bore single track tunnel from Stratford to Ripple Lane	10 km
Thames Tunnel	Twin bore single track tunnel under the River Thames between Thurrock and Ebbsfleet	2.5 km
North Downs Tunnel	Double track single bore tunnel at Blue Bell Hill (between Maidstone and Rochester in Kent)	3.2 km
Ashford Tunnels	Three cut and cover tunnels	1.5 km
<b>Bridges and viaducts</b>		
Medway Viaduct	Twin track viaduct spanning the river Medway in north Kent	1.2 km
Thurrock Viaduct	Twin track viaduct spanning the M25 and providing access to the Thames Tunnel	1.2 km
Aveley Viaduct	Twin track viaduct adjacent to SSSI freshwater wetlands	1.0 km

**CONNECTIONS WITH OTHER RAILWAY NETWORKS AND FACILITIES**

A train operator wishing to use any of these facilities should contact the relevant infrastructure manager.

<b>Location</b>	<b>Connected network/facility</b>	<b>Infrastructure Manager</b>
St Pancras	North London Line (allowing onward connection to the West Coast Main Line)	NRIL
St Pancras	Midland Main Line	NRIL
St Pancras	East Coast Main Line bridge	NRIL
Temple Mills (near Stratford)	Temple Mills train maintenance depot	EIL
Ripple Lane (near Dagenham)	NRIL network and Ford and Hanson freight depots	NRIL
Springhead Junction	North Kent Line	NRIL
Fawkham Junction	Waterloo connection (diversionary route for domestic services only)	NRIL
Ashford	Ashford connecting lines East Kent lines	NRIL
Dollands Moor	Freight yard	DBS
Cheriton	Channel Tunnel	Eurotunnel

## Appendix 4: HS1 Station Fact Sheet

### PLATFORMS

#### Platform numbers and lengths at St Pancras International

Platforms	Users	Length	Useable length after allowing for stopping distance
1 to 4	Domestic services on the Midland Main Line (NRIL network)	294m	284m
5 to 10	International services	434.93m	424.93m
11 to 13	High speed domestic services to Kent	294m	284m

#### Platform numbers and lengths at other HS1 stations

Platforms	Users	Nominal length
<b>Stratford International</b>		
1 and 4 (currently not used)	International services	410m
2 and 3	High speed domestic services	290m
<b>Ebbsfleet International</b>		
1 and 4	International services	410m
2 and 3	High speed domestic services to East Kent	290m
5 and 6	High speed domestic services North Kent	290m
<b>Ashford International</b>		
1 and 2	International services	412m

#### Platform heights at all HS1 stations

International platforms 760mm

Domestic platforms 915mm

### CAR PARKING AND RETAIL SPACE

Station	Car park	Retail space	
St Pancras International	324 spaces	90,000 sq ft	(8,400 sq m)
Stratford International	840 spaces (open April 2013)	3,000 sq ft	(280 sq m)
Ebbsfleet International	Over 5,000 spaces	3,000 sq ft	(280 sq m)
Ashford International	1,800 spaces	3,000 sq ft	(280 sq m)

## CONNECTIONS

St Pancras International	<p>6 underground lines (Northern, Piccadilly, Victoria, Circle, Metropolitan, Hammersmith &amp; City)</p> <p>Mainline rail connections at St Pancras International</p> <ul style="list-style-type: none"> <li>• To the East Midlands (operated by East Midlands Trains)</li> <li>• To Bedford and Brighton (operated by First Capital Connect)</li> </ul> <p>Mainline rail connections at nearby stations</p> <ul style="list-style-type: none"> <li>• To the east and north east of England and Scotland from King's Cross (operated by East Coast and First Capital Connect)</li> <li>• To the West Midlands, north west England and Scotland from Euston (operated by Virgin Trains and London Midland)</li> </ul>
Stratford International	<p>Docklands Light Railway (DLR)</p> <p>Connections from nearby Stratford Regional station</p> <ul style="list-style-type: none"> <li>• Central and Jubilee underground lines</li> <li>• DLR</li> <li>• London Overground</li> <li>• Mainline rail services to East Anglia</li> <li>• Crossrail from 2018/19</li> </ul>
Ebbsfleet International	Connections to the major road network - M25, M20, M2 and A2
Ashford International	Connections to the major road network - M20

## REGENERATION AROUND HS1 STATIONS

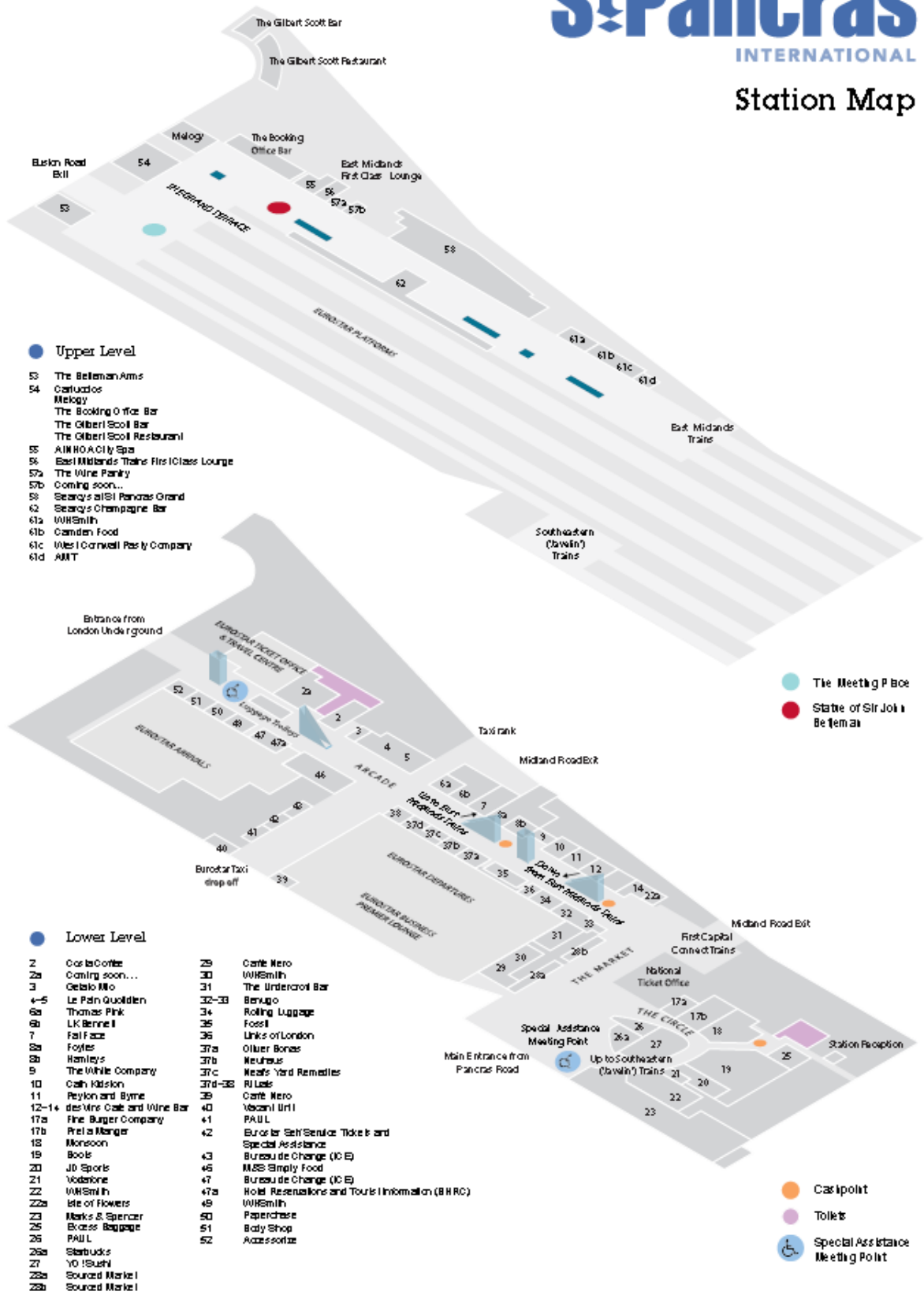
St Pancras International	<p>King's Cross Central <a href="http://www.kingscross.co.uk">www.kingscross.co.uk</a></p> <p>67 acres, 8 million sq ft (740,000 sq m) of mixed use space</p>
Stratford International	<p>Queen Elizabeth Olympic Park (<a href="http://noordinarypark.co.uk">noordinarypark.co.uk</a>) and Stratford City development together form a 700-acre development.</p>
Ebbsfleet International	<p>Ebbsfleet Valley redevelopment <a href="http://www.ebbsfleetvalley.co.uk">www.ebbsfleetvalley.co.uk</a></p> <p>1,035 acres, 17 million sq ft (1.6 million sq m) of floor space for residential, business, retail, leisure and community uses</p>

## STATION WEBSITES

St Pancras International	<a href="http://stpancras.com/">http://stpancras.com/</a>
Stratford International	<a href="http://stratfordintl.co.uk/">http://stratfordintl.co.uk/</a>
Ebbsfleet International	<a href="http://ebbsfleetintl.co.uk/">http://ebbsfleetintl.co.uk/</a>
Ashford International	<a href="http://ashfordintl.co.uk/home">http://ashfordintl.co.uk/home</a>

# St Pancras INTERNATIONAL

## Station Map



Taken from [www.stpancras.com/downloads/station-maps/](http://www.stpancras.com/downloads/station-maps/)

STRATFORD INTERNATIONAL STATION MAP



Taken from [www.stratfordintl.co.uk/station-map/](http://www.stratfordintl.co.uk/station-map/)

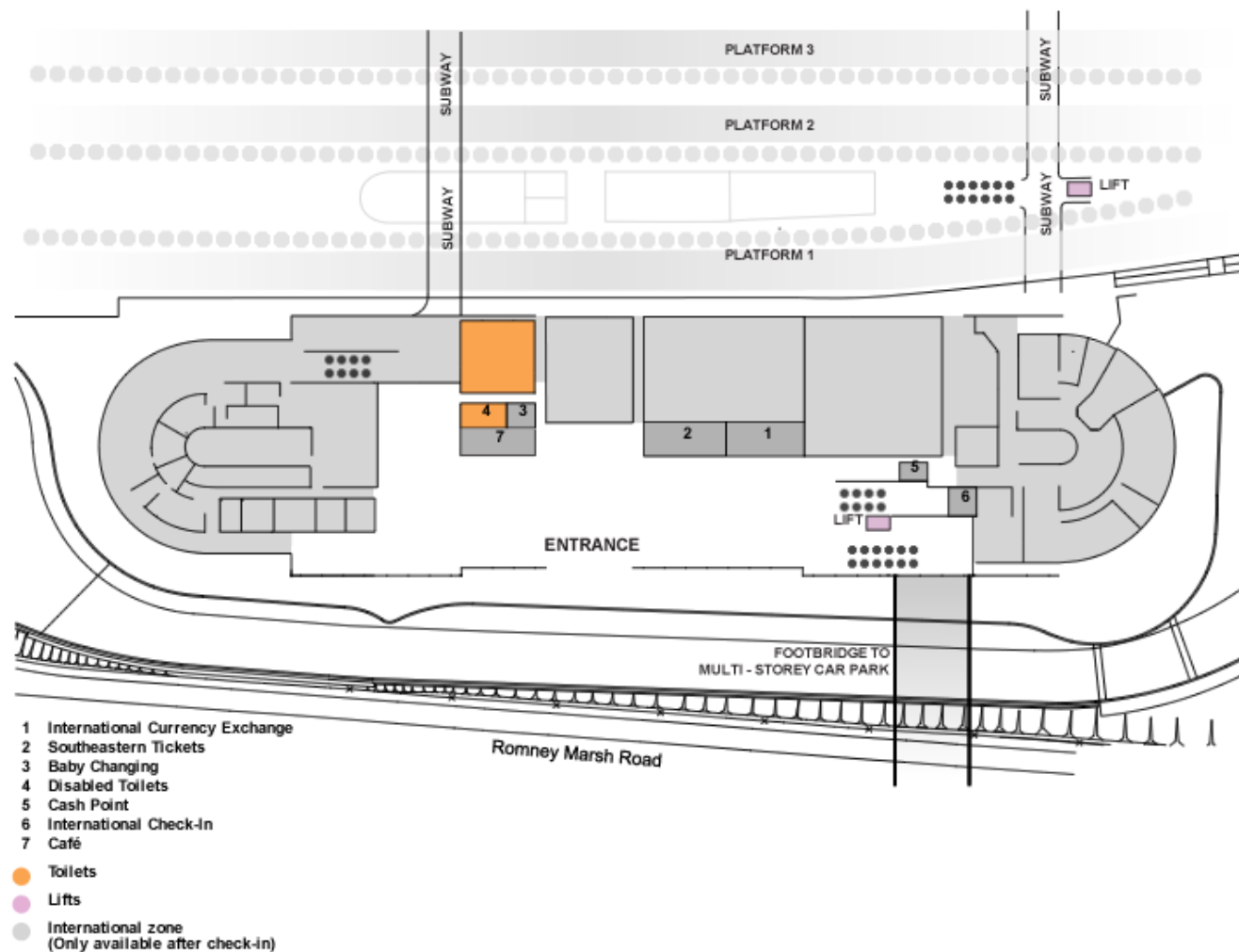
**EBBSFLEET INTERNATIONAL STATION MAP**



Taken from [www.ebbsfleetintl.co.uk/station-map/](http://www.ebbsfleetintl.co.uk/station-map/)



**ASHFORD INTERNATIONAL STATION MAP**



Taken from [www.ashfordintl.co.uk/station-map](http://www.ashfordintl.co.uk/station-map)

## Appendix 5: Checklist of key approvals, authorisations and contracts required

The following table lists the key approvals, authorisations and contracts that a new train operator on HS1 would require and the section of the New Operator Guide in which each is discussed.

<b>Requirement</b>	<b>Section</b>
Operator licence	3.1.1
Direct Agreement	3.2
LTSD approval of train operator's security programme	3.3
UK Border Force approval	3.4
Safety certificate	4
Vehicle authorisation	5.1
Demonstration of route compatibility	5.2
Track access agreement with HS1 Ltd	9.1.1
ORR approval of track access agreement	3.1.2
Station access agreement(s) with HS1 Ltd	9.1.2
Timetable development	11

## Appendix 6: Contacts List

Contact details for HS1 Ltd and other organisations are set out below:

Subject	Organisation	Contact details
All enquiries	HS1 Ltd	Wendy Spinks, Head of Revenue Development HS1 Limited 12th Floor One Euston Square 40 Melton Street London NW1 2FD <a href="mailto:Wendy.Spinks@highspeed1.co.uk">Wendy.Spinks@highspeed1.co.uk</a> 020 7014 2716
Operator licensing/SNRP	ORR	<a href="mailto:licensing.enquiries@orr.gsi.gov.uk">licensing.enquiries@orr.gsi.gov.uk</a>
Security requirements	LTSD	Joe Ismail <a href="mailto:joe.ismail@dft.gsi.gov.uk">joe.ismail@dft.gsi.gov.uk</a> 020 7944 2848
UK immigration and customs requirements	UK Border Force	Simon Eglesfield, <a href="mailto:Simon.Eglesfield@homeoffice.gsi.gov.uk">Simon.Eglesfield@homeoffice.gsi.gov.uk</a>
	Home Office	Colin Jackson, <a href="mailto:Colin.Jackson@homeoffice.gsi.gov.uk">Colin.Jackson@homeoffice.gsi.gov.uk</a> Martin Maynard, <a href="mailto:Martin.Maynard2@homeoffice.gsi.gov.uk">Martin.Maynard2@homeoffice.gsi.gov.uk</a>
Safety Certification	ORR	Executive - Permissioning & Divisional Support Railway Safety Directorate Office of Rail Regulation 1 - 2 Peasholme Green York YO1 7PX Phone: 0207 282 3772
Commitments relating to access to St Pancras station, Temple Mills depot and paths on HS1	UK Monitoring Trustee	Chris Bolt <a href="mailto:cwbolt@gmail.com">cwbolt@gmail.com</a>
Policing	British Transport Police	Paul McGregor <a href="mailto:Paul.Mcgregor@btp.pnn.police.uk">Paul.Mcgregor@btp.pnn.police.uk</a>

Where contact details are not provided above, please contact HS1 Ltd in the first instance.

## Appendix 7: Web links

For ease of reference this appendix provides a single list of the web links mentioned throughout the New Operator Guide.

### HS1

[www.highspeed1.co.uk](http://www.highspeed1.co.uk)

HS1 Network Statement <http://highspeed1.co.uk/regulatory/network-statement/>

HS1 Passenger Access Terms, existing Framework Track Access Agreements and List of electricity consumption rates and prices for passenger services <http://highspeed1.co.uk/regulatory/track-passenger/>

HS1 Freight Access Terms, Template Framework Freight Track Access Agreement and Freight electricity consumption rates and prices <http://highspeed1.co.uk/regulatory/track-freight/>

HS1 Station Access Conditions, Access Conditions Annexes for each of the four HS1 stations <http://highspeed1.co.uk/regulatory/station/>

HS1 Network Code and other operational codes <http://highspeed1.co.uk/regulatory/codes/>

HS1 Ltd Sustainability Policy

[http://highspeed1.co.uk/media/10355/hs1\\_ltd\\_sustainability\\_policy\\_2011\\_april.pdf](http://highspeed1.co.uk/media/10355/hs1_ltd_sustainability_policy_2011_april.pdf)

### ORR

[www.rail-reg.gov.uk](http://www.rail-reg.gov.uk)

#### ***Safety Certification***

ROGS page <http://www.rail-reg.gov.uk/server/show/nav.1511>

A Guide to ROGS, September 2012 <http://www.rail-reg.gov.uk/upload/pdf/rogs-guidance-sept12.pdf>

Safety certificates and authorisation page <http://www.rail-reg.gov.uk/server/show/nav.1520>

Safety certificate application form [http://www.rail-reg.gov.uk/upload/pdf/Sfty-cert\\_mnln\\_apfrm.pdf](http://www.rail-reg.gov.uk/upload/pdf/Sfty-cert_mnln_apfrm.pdf)  
and guidelines for completion [http://www.rail-reg.gov.uk/upload/pdf/guides4completion\\_2.pdf](http://www.rail-reg.gov.uk/upload/pdf/guides4completion_2.pdf)

#### ***Operator licence/SNRP***

Operator licensing page <http://www.rail-reg.gov.uk/server/show/nav.192>

Model licences and SNRPs <http://www.rail-reg.gov.uk/server/show/nav.1962>

How to apply for a licence <http://www.rail-reg.gov.uk/server/show/nav.197>

#### ***Approval of track access agreements***

HS1 access regulation page <http://www.rail-reg.gov.uk/server/show/nav.2507>

Criteria and Procedures for the approval of framework agreements on the HS1 network, January 2013 [http://www.rail-reg.gov.uk/upload/pdf/hs1\\_criteria\\_and\\_procedures.pdf](http://www.rail-reg.gov.uk/upload/pdf/hs1_criteria_and_procedures.pdf)

## **DfT**

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

## **UK Border Force**

[www.ukba.homeoffice.gov.uk](http://www.ukba.homeoffice.gov.uk)

## **UK Monitoring Trustee**

EIL, HS1 Ltd, SNCF and SNCB commitments

[http://ec.europa.eu/competition/mergers/cases/decisions/M5655\\_20100617\\_20212\\_831906\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/M5655_20100617_20212_831906_EN.pdf)

## **IGC**

[www.channeltunneligc.co.uk](http://www.channeltunneligc.co.uk)

Regulations and Guidance page <http://www.channeltunneligc.co.uk/-Regulations-and-guidance-.html?lang=en>

## **NRIL**

[www.networkrail.co.uk](http://www.networkrail.co.uk)

Network Statement <http://www.networkrail.co.uk/aspx/3645.aspx>

## **ERA**

[www.era.europa.eu](http://www.era.europa.eu)

Reference Document Database <http://www.era.europa.eu/Core-Activities/Cross-Acceptance/Pages/Reference-Document-Database.aspx>

## **Other organisations**

RailNetEurope [www.rne.eu](http://www.rne.eu)

Eurotunnel [www.eurotunnelgroup.com](http://www.eurotunnelgroup.com)

EIL [www.eurostar.com](http://www.eurostar.com)

LSER [www.southeasternrailway.co.uk](http://www.southeasternrailway.co.uk)

DBS [www.dbschenker.com](http://www.dbschenker.com)

## Appendix 8: Version Controls

Version	Date	Changes
1	28/2/2013	Version 1

This Guide is correct at the time of issue. HS1 will review the document annually and place updated version on the the HS1 website listing the changes. If a significant change occurs we will update and republish outside of the annual review process.