

# HS2 Ltd Third-Party Communications Package

## Shadow Operator Prospectus

### Background

HS2 Ltd will shortly commence procurement of its Third-Party Communications (“TPC”) Package. The TPC Package will utilise the fibre network underpinning HS2 Ltd's Operational Communications to provide services principally to rail passengers, other rail and non-rail users and to the emergency services.

The scope of the TPC Package includes:

#### *Passenger Communication Systems*

- Passenger Communications Systems (“PCS”) infrastructure and services to support the provision of voice and data mobile communications for HS2 customers when using HS2 services throughout the HS2 estate (stations, line of route and tunnels).

#### *Emergency Services Network*

- Emergency Services Network (“ESN”) coverage is to be provided in stations, tunnels, depots and line of route to facilitate mobile communications for the emergency response organisations.

#### *Station Data Network (Fixed, Operational Wi-Fi and Public Wi-Fi)*

- The Station Data Network (“SDN”) is to be based upon Internet Protocol (“IP”) transmission that will form the communication network within all areas of HS2 stations.

#### *Non-Rail/Other Communication Services*

- Provision for the supply of non-rail communication services to external parties, utilising HS2 Ltd's fibre backbone.

## Procurement of the TPC Package

HS2 Ltd will undertake two-stage procurement for the delivery and operation of the TPC Package, as described below.

#### *First procurement (contract award in 2023)*

- Appointment of a Design and Build (“D+B”) Contractor, to design and build the TPC network to HS2 Ltd's specifications (as per the scope described above).
- Appointment of an Interim Operator (“IO”), to provide ESN and voice/data services during the trial and testing stage of the HS2 railway. The IO will be responsible for arranging the provision of these services with the ESN and Mobile Network Operators (MNOs).
- The D+B Contractor and the IO will be appointed under a single Contract and the roles will be performed by a sole party to that Contract.

*Second procurement (contract award expected in 2027/28)*

- Appointment of an TPC Operating Partner (“OP”) who will take over the TPC responsibilities from the IO and ensure provision of the full scope of the TPC package, i.e., PCS, SDN and ESN. The OP will also be given incentives to invest in non-rail opportunities.

## Requirement for a Shadow Operator

HS2 Ltd’s rationale for the two-stage procurement approach is to delay appointing an OP until much closer to the start of full HS2 railway operations, when TPC demand and revenue generating possibilities will be better understood. Appointing an OP too early creates the risk of HS2 Ltd providing financial guarantees on the basis of unknown costs and revenues.

However, this means that there will be no OP to oversee – and provide commercial input into – the TPC design, construction and initial operation. HS2 Ltd considers this a risk, with potentially high impact across the full scope of the TPC package. For example, the absence of an OP during design and construction may lead to operational issues involving the provision of MNO and ESN services, or lead to inefficiencies caused by increased maintenance and renewal costs. These may also in turn dis-incentivise the OP to invest in and expand the TPC network.

Therefore, HS2 Ltd intends to mitigate this risk by appointing a TPC Shadow Operator (“SO”), to bring an OP’s perspective to the oversight and management of the D+B contract. The SO will ensure that the TPC Package is fit for purpose and meets the requirements of the future OP and MNOs, acting as a ‘guiding mind’ on the TPC’s long-term technological and commercial viability.

## Shadow Operator Proposed Role and Responsibilities

HS2 Ltd proposes that the SO will have the following responsibilities:

### **1. To advise on the TPC design and construction from the perspective of a long term commercially minded Operator**

An important requirement for the TPC Package is that it is capable of being used to take advantage of new market opportunities and maximise its revenue generating potential. These opportunities may include the provision of fixed fibre and mobile connectivity to rural areas near the HS2 route (depending on existing coverage) but also future communication innovations and market developments.

HS2 Ltd is aware of the challenges in predicting future market opportunities and revenue generating possibilities (the TPC will not be fully operational until 2030). Nevertheless, we need to ensure, as far as it is feasible to do so, that a future OP is incentivised to invest in the TPC network and take advantage of market developments. The TPC Package’s revenue generating potential will determine the final OP model: for example, high revenues would suggest a “demand risk” operating concession model; whilst low revenues suggest a conventional “fee based” management contract.

We therefore want the SO to provide the CMT with advice on issues including the following:

- Horizon scanning, to provide evidenced-based forecasts on future market opportunities which the OP may be able to take advantage of;
- Advice to the CMT on how the delivery of the TPC package may be enhanced to maximise investment opportunities and incentives;
- Advice to the CMT on how else HS2 Ltd may encourage investment in the TPC Package, such as through the development of the OP contract and wider consultation with the market.

## **2. To provide HS2 Ltd with an intelligent client function**

HS2 Ltd's Contract Management Team ("CMT") will oversee the design and construction of the TPC Package and will liaise directly with the D+B Contractor.

The TPC Package is fundamentally different from HS2 Ltd's core business. Most HS2 Ltd contractual deliverables are concerned with railway civil engineering, rail systems or rolling stock. Consequently, whilst the CMT will have a solid understanding of railway requirements, there is a potential risk of information "asymmetry" between the CMT and the D+B Contractor. This information asymmetry has the potential to disrupt effective management and delivery of the TPC Package. Examples include:

- Sub-optimal TPC design, leading to higher capex costs and/or high operating and maintenance costs, or coordination problems with other HS2 Ltd systems;
- Use of poor-quality components, leading to high operating and maintenance costs and/or earlier than expected renewal costs;
- Design and/or construction creating high risk of early technical obsolescence, high cost of upgrade, and/or operating inefficiencies.

The SO will therefore support the CMT by acting as an intelligent client. The SO will advise the CMT throughout the life of the TPC Contract on all aspects of design, construction and testing and initial operation. The main priority for the SO will be to ensure that there are no information asymmetries between HS2 Ltd and the D+B Contractor.

## **3. Design Review**

The SO will be required to undertake a "Design Review" of the D+B Contractor's TPC design proposals. This Design Review will take place before the start of construction and will be the final opportunity to assess the TPC Package design and its suitability for meeting HS2 Ltd's requirements.

HS2 Ltd will provide full details of the Design Review over the course of its procurement of the D+B Contractor and the SO. However, we expect it to include the following features:

- The Design Review will be purely advisory in nature and the SO will not have the ability to "veto" or reject any element of the final design;

- It is intended to allow the SO to have a final complete overview of the TPC design, following the SO's input as intelligent client during the design history;
- It will also be the SO's final opportunity to review the commercial viability of the proposed TPC design, to ensure that it is specified to encourage future investment and growth;
- HS2 Ltd would not expect the SO to raise any new issues at Design Review but to comment only on the issues it may have previously raised;
- The final sign-off on the TPC design will be agreed solely between the CMT and the D+B Contractor.

#### **4. To advise on the Interim Operator's negotiations with ESN/MNO**

Under the TPC Contract, the D+B Contractor will become the IO when HS2 begins trial railway operations (around 2027/28). The IO will be responsible for negotiating the provision of ESN and MNO services, to meet HS2 Ltd's trial operations requirements. These will be less than full passenger operating requirements and we currently anticipate that the IO will need to negotiate with one MNO (assuming this MNO also provides the ESN), or two MNOs (if MNO services are provided separately to ESN services).

The successful completion of these negotiations is crucial to HS2's trial operations. The TPC Contract places the responsibility for this on the IO, on the basis that the IO will be more familiar with the market and better placed than HS2 Ltd to lead these negotiations. However, HS2 Ltd will step in if it becomes apparent that the negotiations – and the timely provision of ESN and MNO services – are in jeopardy.

Therefore, HS2 Ltd requires the SO to have an overview of the IO negotiations and to advise the CMT on progress and the likelihood of successful completion. We expect the SO to fulfil this role as follows:

- By having an observer status in the IO/ESN/MNO negotiations;
- By providing the CMT with regular reports on progress, and early-warning on emerging issues that pose a risk to successful completion.

#### **5. To facilitate a smooth transition of the TPC Package from the Interim Operator to the appointed Operating Partner**

The IO will hand over responsibility for the TPC network to the OP, and ensure that the OP is able to provide all TPC requirements and services from day one of passenger services.

The details of this handover will be agreed between the CMT, the IO and the OP. It is, however, already known that the handover will be "staggered", because the HS2 railway is opening in stages. This means that for a short period following initial opening, the TPC network will be managed and operated by both the IO and the OP (and potentially the D+B Contractor may still be completing parts of the TPC Package).

As with the ESN/MNO negotiations, HS2 Ltd requires the SO to have an overview of the transition and to advise the CMT on the following:

- That it has confidence in the handover arrangements and that these will be satisfactorily completed in line with the wider railway opening schedule;
- That there are suitable governance arrangements in place to effectively manage the handover;
- That there is a high standard of project management good practice being applied to the handover.

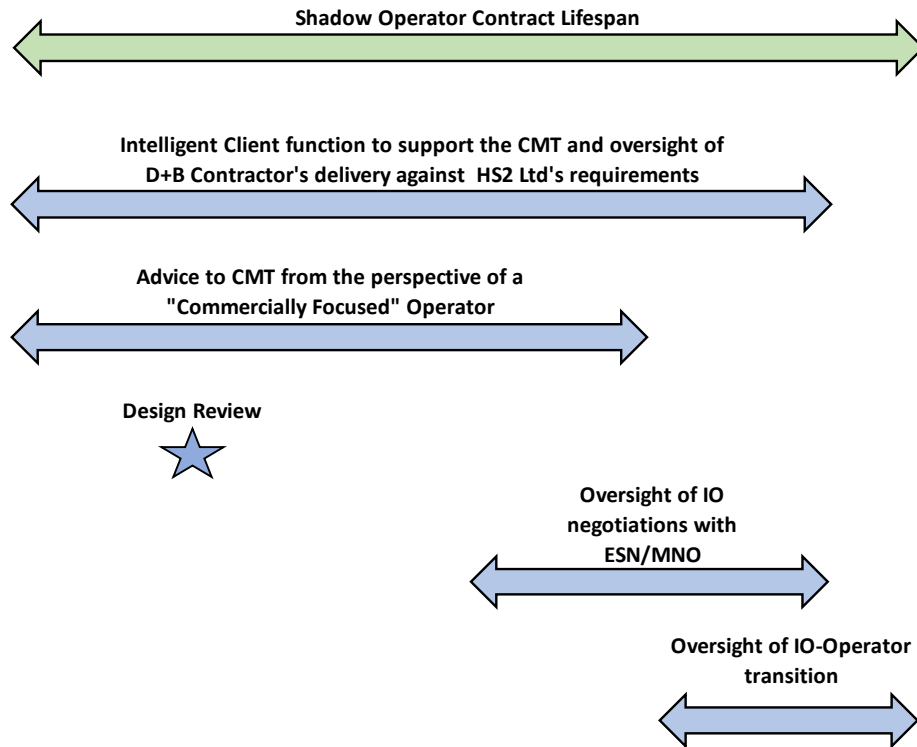
#### **6. To propose contractual changes where deemed necessary to meet HS2 Ltd's overall requirements**

The TPC Contract has been subject to internal and external assurance and we are confident that, together with effective contract management and SO oversight, it will deliver all requirements. However, we cannot rule out the possibility that a SO may identify an important design, construction or operational issue which can only be resolved through a change to the agreed contractual terms. This would very much be a “last resort” matter and HS2 Ltd would need to be satisfied that there are no other options and that without the change there would be a material impact on delivering the full TPC requirements.

Diagram 1, below, shows the timing of SO responsibilities against key stages in the design, trial and operation of the TPC Package.

#### **Diagram 1: Shadow Operator role and responsibilities against TPC timeline**

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
HS2 Pathway 1	Construction, Testing, Commissioning					Trial Operations		Passenger Services			
HS2 Pathway 2						Trial Operations		Passenger Services			
HS2 Pathway 3						Trial Operations		Passenger Services			



### Procurement Approach

Procurement of the SO will be conducted separately to the TPC Package procurement. Timing wise, we expect it to run broadly in parallel with the first stage of the TPC procurement, i.e., appointment of the D+B Contractor.

HS2 Ltd expects that the SO will be awarded under a Professional Services Contract and that procurement will involve a pre-qualification period, followed by an Invitation to Tender. Responses to SO market engagement will help inform the design of the SO procurement.

Dates are still to be determined, but the aim is to have the SO in place by the time that the D+B Contract is awarded.