



## North Skye Broadband - Very High Level Requirement

The primary objective of North Skye Broadband (NSB) is to create and operate a world-class Broadband service to the areas of the Isle of Skye that are not included in the BT Faster Broadband Project.

The primary funding for the capital aspects of the project are expected to come from Community Broadband Scotland with other funding from a variety of sources such as the Highland Island Enterprise, Local Community Trusts, share issues, Social Impact Bonds, etc.

NSB also wishes to use the project as a vehicle for the development of skills within, and the creation of sustainable employment for, the local population through the opportunities arising out of the building of the broadband network and the operation of associated services.

Any operating surpluses from the project will be used to improve and extend the service and thereafter used solely for community benefit.

At the highest level NSB is looking for a technical proposal and price for the design, build, and operate (declining) of a Broadband service to all residences in the project area. The high level performance parameters are a minimum of 30Mbps up to unlimited (say 1 Gbps) capable of supporting full duplex voice, data, and video concurrently and with no material delay as perceived by the customer. The architecture and underlying design needs to be capable of supporting up to at least 50 times the number of residences defined and extensible to any area in at least the Highland Region, and preferably anywhere in Scotland. All assets will be owned by North Skye Broadband and the service(s) will be branded as such.

The operating phase of the project will run for up to 7 years with the expectation that over time the entire operating-responsibility will migrate from the successful bidder(s) back to NSB over the life of the project.

Although a single supplier is desirable, it is recognised that the breadth of the requirement may make this impossible for some suppliers and NSB has therefore broken the project into 4 separate sub projects each of which may be proposed in isolation. It should be noted that in the event of multiple suppliers, NSB will require all suppliers to contractually agree joint and several responsibility for their interface to each other.

The four sub projects are:

- Back Haul Connection
- Core/Backbone NSB Network
- Access Layer
- Business Management Systems



The following sections cover each of the sub- projects in more detail:

### **Back Haul Connection**

The back haul connection will support an immediate take up of customer connections at 1GBPS symmetrical with no rate limit. NSB requires immediate scalability to be built into the solution with an aggregated capacity of 10gbps and above. Where the solution is either a leased asset or other solution. The leasehold or ownership agreement will be in NSB`s ownership from inception, NSB reserve the right to contract this requirement. Where NSB core network hands off to external networks the connection will be to a suitable transit provider. Preferably peering agreements will be in place with content providers and large scale content distribution networks in order to minimise costs and future capacity implications.

### **Core/Backbone Network**

This sub-project is for the design, implementation and operation of the core backbone network. It also includes all aspects of Network, fault and error management for the whole system (including the access layer) but not the physical equipment maintenance and repair. The core network is required to be capable of handling customer connections of 10Gbps and above symmetrical speed connection without any rate limiting with immediate scalability. For the avoidance of doubt, the Core Network is defined to include the interface to the Back Haul and the interface to the Access Layer.

The core network must be extensible both from the coverage and capacity perspective. The design and implementation needs to cater for 1Gbps to the premise uncontested. It is expected that the actual capacity required will be considerably lower than this in the early part of the project with the demand growing to this level by year 4 or 5. The design must allow the core to be extended geographically throughout the Highlands and ideally throughout Scotland and the capacity likewise to cater for up to 120,000 premises (this is understood to be the current scope of CBS for premises outside the BT Faster Broadband Project).

The core network and its Points of Presence needs to be resilient to failures through the provision of dual homing and where possible diverse routing. It is recognised that in the event of failures there may be capacity limitations but these should never be less than 50% of the normal operating capacity. The core network should also have standby power capability such that it can survive a 24 hours mains power outage.

The network management system (NMS) shall be capable of monitoring transient and permanent errors on the network and reporting them where they impact the quality of the service provided. Where there are repetitive transient errors these shall be analysed by the NMS or Operator to pre-empt worsening conditions. The NMS shall also be capable of interfacing to the Business Systems in order to meet the data requirements from those systems as well as meeting any statutory requirements.



### **Access Layer**

This sub-project is for the design, implementation and operation of the Access Layer. The access layer being everything required from the NSB PoP up to and including the NSB Network Termination Point (NTP) in the customers premises.

Although NSB is technology agnostic the performance requirements would probably dictate that to achieve the higher speeds Fibre to the Home (FTTH) will be necessary. NSB is intent on providing FTTH or equivalent technology capable of delivering at least 1Gbps however it is anticipated that initially a wireless or equally limited solution may be necessary (at least in the short term) to some of the locations. NSB therefore expects a range of access layer solutions to be offered, but all must be capable of delivering at least the minimum of 30Mbps.

### **Business Management Systems**

This sub-project is for the design, implementation and operation of the Business Management systems required to carry out the business of NSB. The business areas to be provided are:

- Sales Order Processing
- Order progress and tracking
- Billing
- Accounting
- Procurement
- Asset management
- Management Information
- Configuration Control & Management

### **Operations Transfer**

The longer term plan for North Skye Broadband is to take ownership of all aspects of Network Operations. This includes sales, service, maintenance, business systems management, network management, installation, upgrade etc. Initially, NSB expects the supplier(s) to provide a full operations service and over time the operation shall transfer back to NSB.

NSB would expect to take responsibility for Sales and Marketing from the outset, and possibly 1st line support. The Supplier(s) should propose suitable and logical packages of operational functionality to transfer and the price reduction for doing so. NSB would prefer a flexible approach to the timescales for the transfers however it is recognised that the supplier may wish to place restrictions on this timetable in the interests of predictability of business plan and obligations. It is anticipated that the knowledge transfer to allow this process to work will largely be achieved by a co-operative training agreement between the Supplier(s) and NSB for the benefit of the latter's employees and/or (where so mutually agreed) employee transfer from the Supplier(s) to NSB.

As part of the Operations Transfer there will be a point where the obligations associated with being an ISP will need to transfer from the Supplier to NSB. This needs to be clearly identified in the proposal along with the means for this to be achieved.