BGAN and IP Data Connections

Version 1.0

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This document uses the following conventions.

**Note:** Key points are shown in this format.

**Bold font** indicates commands, keywords and text labels on GUI items.

**Italic font** indicates titles of other documents in the suite of BRM-related documentation.

**Monospace font** indicates text that you must enter.

**SMALL CAPITALS** indicate keys that you must press.
2: Types of data connection

BGAN comes with two types of IP data connection already set up:

> Standard IP.
> Streaming IP.

2.1: Standard IP

Data rates of up to 492kbps (depending on the terminal) over a best effort, shared connection. 
Best suited to TCP applications, such as Internet browsing, e-mail and FTP.

2.2: Streaming IP

> Choose from data rates of:
  > 8/16kbps streaming (for Maritime FB250 and FB500 terminals)
  > 32kbps streaming
  > 64kbps streaming
  > 128kbps streaming
  > 176kbps streaming (for Enterprise)
  > 256kbps streaming
  > 384kbps streaming (minimum speed for BGAN X-stream / BGAN HDR)

All over a shared connection. 
> Quality of Service (QoS) is consistent and guaranteed. However, overheads like packet header size and interconnect with terrestrial networks may impact throughput.

Best suited to UDP applications, such as audio and video.

**BGAN and QoS**

To ensure a consistent data rate across the connection, you must ensure that end-to-end QoS is supported between your BGAN Service Provider and your corporate headquarters, including any terrestrial interconnect.

2.3: Dedicated streaming IP

Inmarsat recommends you can set up your own streaming connections, called dedicated streaming IP connections.
2: Types of data connection

- Exclusive to a particular application, such as Real Media, QuickTime or Win Media,
- Requires a traffic flow template (TFT) to define traffic filters, and ensure that the application does not share the connection with any other traffic.
- The standard IP connection must be open before you can open a dedicated streaming IP connection. This is because a dedicated streaming IP connection uses the routing information of the standard IP connection.
- More than one dedicated streaming IP connections can be open in addition to the standard IP connection. The maximum number depends on the terminal.
- You can configure as many dedicated streaming IP connections as you require.

**Traffic Flow Templates**

The following are examples of applications that can use TFTs:

- FTP
- QuickLink
- QuickTime
- Real Media
- Streambox
- WinMedia

If you want to define your own TFT for another application, contact your Service Provider for assistance.
3: BGAN and PDP contexts

3.1: About PDP contexts

The BGAN network manages resources using Packet Data Protocol (PDP) contexts. A PDP context must be established between the BGAN terminal and BGAN/UMTS core network before you can transfer data across the network.

The BGAN terminal creates a PDP context for each IP data connection that you open to send or receive traffic over the BGAN network.

If you open the standard IP data connection or streaming IP data connections the BGAN terminal opens a **primary PDP context**, as shown below.

![Primary PDP Context Diagram]

Primary contexts can each connect to a different APN and each get a public IP address.

If you open a dedicated streaming IP data connection, allocated to a particular application, the BGAN terminal opens a **secondary PDP context**, specifically for this connection, as shown below:

![Secondary PDP Context Diagram]

A secondary context shares the APN and IP address with the primary context. However, the secondary PDP context can have a different QoS from the primary PDP context.

Each terminal has a different method of managing PDP contexts and supports different combinations of primary and secondary PDP contexts.
4: BGAN and IP addressing

> The BGAN terminal will be allocated an IP address (public or private) from the range the PDP context has been configured for

> Each of the computers connected to the terminal obtains a private IP address, either direct from the terminal’s NAT functionality or from a router connected to the terminal

**Note:** Depending on the terminal make, model and configuration settings, computers could also receive the IP address allocated to the UT if that IP is public.

Each terminal has a different method of managing IP addressing.
### Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Dynamic Host Configuration  Protocol</td>
<td>DHCP</td>
<td>A standardised networking protocol used on Internet Protocol (IP) networks for dynamically distributing network configuration parameters, such as IP addresses for interfaces and services.</td>
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<tr>
<td>Network Address Translation</td>
<td>NAT</td>
<td>A methodology of modifying network address information in Internet Protocol (IP) datagram packet headers while they are in transit across a traffic routing device for the purpose of re-mapping one IP address space into another.</td>
</tr>
<tr>
<td>Port Address Translation</td>
<td>PAT</td>
<td>An extension to network address translation (NAT) that permits multiple devices on a local area network (LAN) to be mapped to a single public IP address. The goal of PAT is to conserve IP addresses.</td>
</tr>
<tr>
<td>PDP context</td>
<td></td>
<td>A Packet Data Protocol (PDP) context transfers information about your data connections between the BGAN terminal and the BGAN network. The PDP context defines connection aspects such as routing, QoS and security. The BGAN terminal opens a primary PDP context or a secondary PDP context, depending on the IP data connection type. Refer to BGAN and PDP contexts for details.</td>
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<tr>
<td>Quality of Service</td>
<td>QoS</td>
<td>The overall performance of a telephony or computer network, particularly the performance seen by the users of the network.</td>
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<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>Transmission Control Protocol TCP</td>
<td>A set of rules (protocol) used along with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet. TCP is an OSI Layer-3 protocol.</td>
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<tr>
<td>Traffic Flow Template TFT</td>
<td>A Traffic Flow Template (TFT) is a series of filters that allows traffic that passes the filters to be routed on a particular PDP context, and given a different QoS to traffic on other PDP contexts. TFTs enable the terminal to have more than one PDP context open simultaneously.</td>
<td></td>
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<tr>
<td>User Datagram Protocol UDP</td>
<td>A communications protocol that offers a limited amount of service when messages are exchanged between computers in a network that uses the Internet Protocol (IP). UDP is an OSI Layer-3 protocol.</td>
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