

SIP Trunking

In addition to providing PSTN and ISDN services, Trustmarque partners with Gamma Telecom who connect local exchange equipment directly to its own carrier exchanges enabling users to make and receive telephone calls using SIP Trunking delivered as a direct IP connection.

SIP Trunking provides a next generation access to the PSTN allowing inbound and outbound telephony for termination to a full range of national and international destinations. SIP trunks are connected directly to the customer's local exchange equipment if they support the SIP protocol.

Trustmarque SIP Trunking is accredited and compatible with all major PBX vendors and collaboration platforms including; Cisco, Mitel, Avaya, ShoreTel, 3CX and Microsoft Teams and Skype for Business.

For SIP Trunking services, all calls are directly delivered over the Gamma network and do not require CPS.

SIP Trunking Access

Trustmarque SIP Trunks are provided with or without access. SIP Trunking can be delivered over suitable internet access where it already exists, or, if required, Trustmarque will provide dedicated QoS based access ranging from ADSL and FTTC to single or highly available Ethernet access.

SIP Functionality

The following functionality is supported:

CLIP/CLIR	Network provided features include Calling Line Identification Presentation (CLIP) / Restriction (CLIR) - a service that transmits or restricts a caller's number to the called party's telephone equipment during the ringing signal. Note: for any calls made to the Emergency Services, this will present the default CLI, which is the first number in the allocated DDI range.
CLI Flexibility	As an optional service, customers have the ability to present, NON-Registered CLIs, as the Presentation A-Number CLI. Calls made to the Emergency Services, will automatically present the default CLI, which is the first number in the customer allocated DDI range.
Call Park, Transfer & Conferencing	These features are provided using the SIP re-invite mechanism.
Call Divert	This feature provides the facility to pre-configure call diverts for both individual numbers and DDI number ranges from the portal. Under failure conditions, the user can use a portal and activate either all pre-configured numbers with a single action.
Call Barring	Customers are able to modify their profiles to restrict or allow access to international, mobile or premium rate numbers as required.

Facsimile & DTMF	A facsimile service is supported using both in-band facsimile and modem transport using G.711 A-law codec and renegotiation to T.38 (subject to interoperability testing). RFC2833 is the preferred method for the transport of DTMF tones and is dependent on successful codec negotiation and requires payload type 101 to be assigned. RFC2833 will be used with both G.711 and G.729 codecs.
Emergency Call Support	Trustmarque SIP Trunking service is a VoIP service as defined by Ofcom and supports Emergency Services calls.
Call Admission Control	Through a process known as Call Admission Control (CAC), the maximum call limit of an endpoint defines its capacity for routing calls in the network. As each customer endpoint will have 2 ports, one for outgoing and one for incoming, the CAC limit will be allocated to both ports to allow maximum flexibility.

Number Porting & DMA

Customers can use SIP without the need to change their phone numbers as Trustmarque can port the customer's existing numbers onto the Gamma network. We have active porting agreements with all the major UK carriers.

In some circumstances, a DMA may be required. Data Management Amendment (DMA) is the process involved to transfer Range Holder status for 1,000 or 10,000 Geographical Number Blocks. DMAs have to be carried out where an entire Ofcom allocated range is changing Range Holder.

A DMA request requires the Range Holder ownership to change to a new network operator. Whereas with a standard port request the Range Holder stays the same and traffic is routed/porting to the Gaining Provider. In addition, there could be a cost associated with the DMA, however we will not know the exact cost until our Interconnect Team apply to the current Range Holder requesting a DMA.

The process itself does not go through the regular porting regulations and so has different lead times to complete and can take up to 90 days once initially requested.

DDI Ranges

In addition to porting in customers' existing number ranges on both Openreach based services or SIP Trunking services for all UK area codes, including Non-Geographic Numbers, Trustmarque can also provide new DDI number ranges from 10 numbers up to 10,000 numbers.

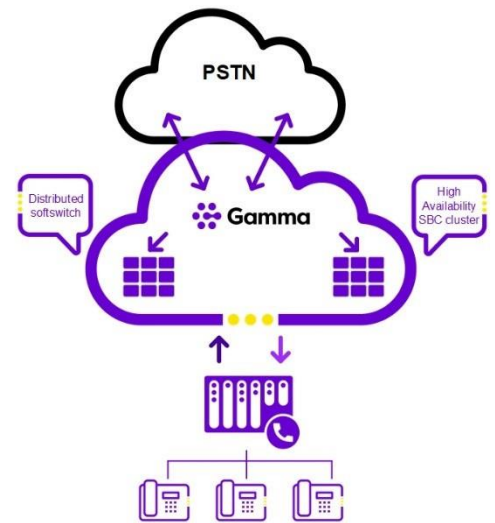
Business Continuity Solutions

Trustmarque will advise on the service configuration options that can be deployed, and which are most appropriate to each customer's requirements. The basic options are described, briefly, below.

Enhanced

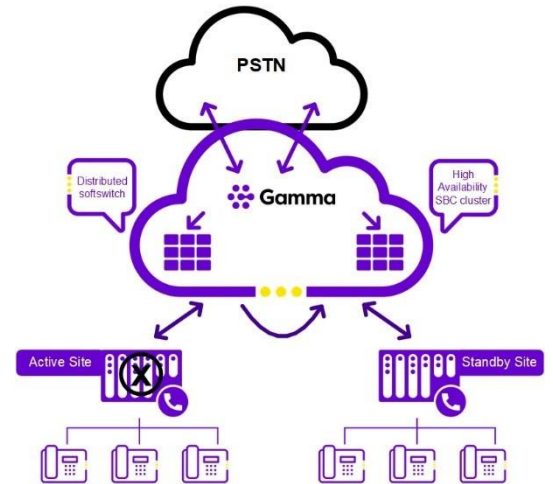
The enhanced SIP service is diversely built in two different exchanges in the Gamma network giving you additional resilience at a network level - i.e. if the primary exchange fails, you will auto failover to the backup service and exchange.

Note: Your telephone system setup will need to accept two IP addresses from Gamma.



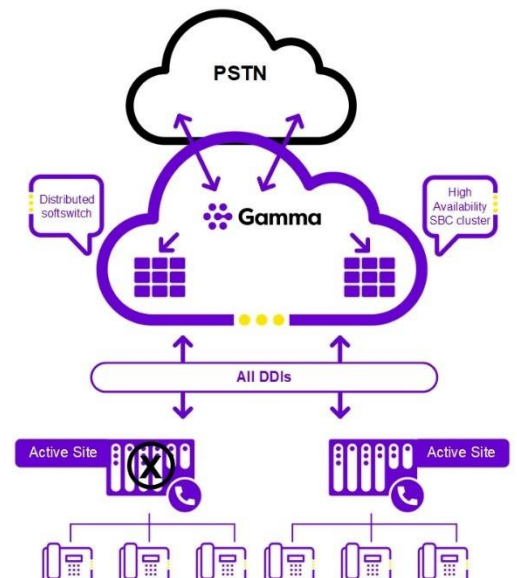
Active / Standby

This design offers dual endpoints in active / standby mode working off geographically diverse Gamma SBC HA clusters. For this configuration, all traffic will route to the primary endpoint. In the event of failure, all calls will automatically route to the secondary endpoint.



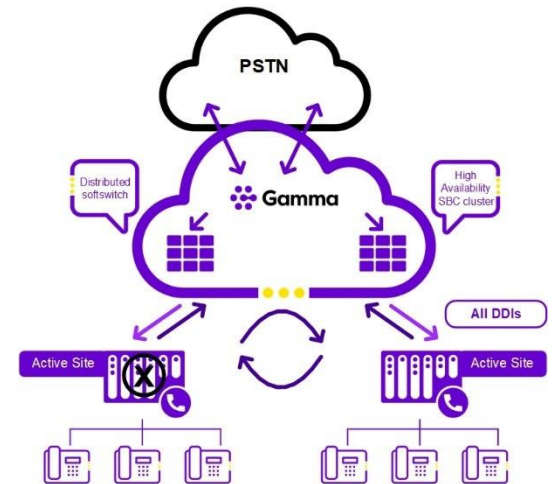
Load Share

This design offers dual endpoints in load share mode working off geographically diverse Gamma SBC HA clusters. For this configuration, traffic will be delivered in a round robin fashion to ensure equal distribution between endpoints.



Resilience+

The Resilience+ solution is designed to offer two SIP endpoint connections where each endpoint is active to selected DDIs whilst standby resilience is provided by the other endpoint. Resilience+ offers dual live sites with dual failover options.



Service Level Agreement

The Service Availability for standard and resilient options is:

SIP Trunk Endpoint	Availability
Standard Build (single endpoint)	99.95%
Resilient Build (options below)	99.99%

Provisioning Targets

Standard build activity	Time to Complete	Monthly Conformance Target
Portal – Endpoint Creation – Standard Build*1	< 2 Business Days	99.50%
Moves and Changes – Standard Build*1	< 2 Business Days	99.50%
Endpoint Creation – Resilient Build (all Dual Site options)*2	Timescales On Application	NA
Moves and Changes – Resilient Build (all Dual Site options)	Timescales On Application	NA

Notes:

1. Trustmarque will use reasonable endeavours to achieve the Targets above.
2. Any builds not listed in Table 1 above are excluded from this performance measure.
3. Resilient build timescales will be agreed on an individual project basis.
4. Service Provisioning timescales for services associated with the SIP Trunking service, such as Number Porting or IP Access, are available on request.

Fault Resolution Targets

The following definitions will be applied to faults raised on the SIP Trunking product:

Severity	Description	Time to Resolve
Priority 1	Critical Fault - Loss of service - Multiple sites/services affected	4 Hours
Priority 2	High - Loss of service - single site or service	8 Hours
Priority 3	Medium - Disrupted service - multiple or single site or service	3 Business Days
Priority 4	Low - Single number destinations/QOS	7 Business Days

Call Quality Performance

As a means of determining and measuring the call quality of the SIP Trunking service, the Trustmarque's Network Partner measures the call quality of calls passing through the Network Partner's core IP network and Session Border Controllers (SBCs).

Performance is measured using Perceptual Evaluation of Speech Quality (PESQ) score that cover a scale from 1 (bad) to 5 (excellent) for call quality. The SIP Trunking product supports the following codecs, G.711 and G.729 for external call termination.

The PESQ score targets for the supported CODECs for the SIP Trunking product are as follows:

Codecs	Mean Average PESQ Score	Period
G.711	4.1	One Calendar Month
G.729	3.7	One Calendar Month

Optional Additional Services

Fraud Alerting

CallGuard is an optional chargeable service that can be applied to all numbers passing calls to protect the customer against unusual call usage and charges. The service enables customer call usage to be monitored 24/7 and for suspected fraudulent or unusual call activity to be identified. If detected, we will automatically apply a bar to the relevant number which can be removed upon customer request.

The fraud alert function allows customers to set pre-arranged spend limits on individual trunks. These spend limits can be set to monitor both 24hr and 7-day periods. If the spend reaches 100% of the agreed limit an email and SMS will be issued and all subsequent calls from that endpoint will be barred; calls to 999, 112 & 18000 will be unaffected.

SIP Trunk Call Manager (STCM)

STCM is an integrated overlay service unique to the Gamma network, and provides a centralised inbound call management service, managed via a web portal or App that allows the customer to manage, control and report on their Inbound Telephone calls and numbers.

STCM delivers key features including scalable call queuing; date, day and time of day call routing; hunt groups; voice mail; and access to call performance statistics.

STCM Features

STCM Feature	Description
Destination Control	The End User can change the termination number to which their inbound calls are routed. Termination numbers must be UK mobile or fixed line destination numbers. 08 and international termination are available on request.
Day of week Routing	The End User can set up specific call routing to be applied according to day of week from Monday to Sunday.
Time Control	The End User can set up specific call routing according to time of day.
Divert Control	The End User can divert calls according to no answer, busy or on failover.
Area Control	The End User can define the call routing or treatment of a call based on the caller's number or area code.

STCM Feature	Description
Distribution Control	Load balancing of incoming calls across multiple destination numbers. Routing options are percentage or serial.
Date Control	Date Control Nodes are used to define routing for calls made within a particular date range.
Hunt Groups	Hunt Group nodes are used to determine routing of calls to a specific group of users or destinations. Routing options are serial, prioritised, random or parallel.
Call Queuing	The Call Queue control feature is used to establish a network-based call queue within a call routing plan. Various properties can be programmed to determine the queuing experience for the caller.
IVR	The IVR (Interactive Voice Response) control feature enables the creation of a personalised menu announcement with up to 12 options, enabling defined routing/action based on the caller's selection on their keypad.
Announcements	Announcements can also be used in a call plan at any stage to play audio to callers. Users can upload their own files or choose from a selection of Gamma provided announcements.
Advanced Statistics	Displays Inbound call data for all Inbound numbers active on the End User Inbound account. The End User can search for results based on call outcomes, time/date stamp, by caller's telephone number, Inbound or destination number. Results can be downloaded by the User in .CSV format.
Call Whisper	The End User can record an announcement to be played as a prompt to the call answering agent but is unheard by the caller.
Voicemail	The End User can create a call plan with options to route calls to a voicemail node, with a range of email notification options.
STCM App	Call statistics and call plan changes can be accessed via a handheld smartphone/device application.
STCM Reports	User can sign up for daily, weekly or monthly emails containing either a .CSV file of all the advanced statistics for the specified period, or a summary csv file with the high-level statistics for each number within the account. Up to 3 email addresses can be designated to receive the emailed reports.
Limit Caller Admission	Calls to chosen destinations in your call plan can be limited to a configured number of concurrent calls. Once the threshold has been reached excess callers can be treated as follows; diverted, played a message, queued or sent to voicemail.
Shared Values	Calendars and schedules can be shared amongst multiple numbers, allowing for easy adds/moves/changes.
Aliasing	In many large numbering estates users may have many numbers that have the exact same routing plans. Aliasing allows the user to link numbers with the same routing plans together, so changes to one are reflected on any that are linked.
Virtual Numbers	Virtual Numbers allows the user to create sub plans or routing plans that can only be accessed only from another plan, this allows for complex routing to be shared across multiple numbers, reducing the need for repetition and providing simpler complex call plan management.
GoTo	GoTo is used in conjunction with Virtual Numbers to create routing links from one plan to another (to save on repeated building), i.e. 'go to this Inbound or Virtual Number xxxx from this point in the plan.

STCM Feature	Description
Custom Fields	Custom Fields allows the user to add their own unlimited number of column labels or text references (names etc.) to each Inbound number. This data can then be searched and filtered within the Advance Statistic and Push Reporting.

The following additional features are also available as optional, chargeable extras:

-  Auto Attend (IVR)
-  Announcement
-  Area Based Routing
-  Limit Caller Admission

International SIP & Number Services

Trustmarque can provide International SIP Trunking and Number services in many locations throughout the world, due to the regional nature of Telephony the product may vary from region to region and international requirement will require further consultation.

Quality Standards & Security

The services delivered by Trustmarque, using Gamma network, are certified as follows:

-  ISO 9001
-  ISO 14001
-  ISO 22301
-  ISO 27001
-  Cyber Essentials
-  Cyber Essentials Plus
-  Carbon Neutral