

Outline Specification for the Provision of a National Video Relay Service

VRS

1 Technical Provision

1.1 Technical Provision

A Video Relay Service allows hearing and Deaf people to use video technology to communicate in a manner similar to a traditional telephone call via a sign language interpreter.

VRS is a video interpreting service providing (instant) communication, on demand, between a sign language user and a 3rd party whereby the parties are in disparate locations (not co-located).

For example, Sign Language user with webcam/videophone/mobile/tablet etc makes a video call and then signs to Sign Language Interpreter; Sign Language Interpreter then speaks (via phone) to hearing person; hearing person replies (speaks) to the Sign Language interpreter the Sign Language Interpreter then translates (signs) the response to the Deaf person (who can see the interpreter on their computer/TV/video screen).

1.2 Type of Service Provision

The VRS service provision should be an open eco system solution that enables access with non proprietary end user devices which may include:

- PC software
- Tablet software
- Smart phone software applications
- Television interface
- Videophone

1.3 Opening Hours

Opening hours will be specified by service need. A time limited service may have a specified service availability period, examples of which are shown.

<i>Hours p.w.</i>	Mon-Fri	Mon-Sat	7 Days
0900-1700	40	72	84
0800-2400	80	96	112
24 Hours	120	144	168

Alternative service levels could be a tiered service level which, for example, requires a definition of availability (e.g. number of interpreters vs. duration of wait time) or a simple bulk service provision option which might specify the number of minutes in a defined period (tier 1 - <10000 minutes in a week, tier 2 > 10000 minutes in a week).

The organisation purchasing the VRS service will need to consider specifying a service level agreement as part of commercial considerations.

1.4 Handling Multiple Calls

An open platform ACD (automatic call distribution) should be a part of the platform provision. In order to facilitate the use of multiple devices communication protocol converters (e.g. SIP to H.323) will be standard. Management functions (emergency, statistics, call allocation) and billing, for example, should be open platform or appropriate API's provided. FLASH is not fully sustainable in an open network but may be supported in certain internal applications.

The combined capacities of VRS providers should be able to handle an estimated subscriber base of 30,000 with up to 200 simultaneous calls at peak times.

Multiple call centres.

Some CPs may have a requirement for more than one call centre and have the ability to hand off calls between centres especially at peak times

1.5 Telephone Number Access

All telephone numbers must be accessible to the VRS provider. Subscriber databases should be centralised and accessible to all providers. (Similar to enquiries services). Subscriber information should be managed by the CP's making it freely available to the Service Providers. (E.164 Number mapping uses a DNS to convert a telephone number to an IP address.)

Subscription data should be at least 256bit encrypted for data protection. Providers need to conform to Information Governance compliance ISO 27001 or equivalent. There should be, as in common practice currently, an Opt out facility for the end user for the Telephone number to be stored on the database. Service providers as required to share subscriber databases.

A National telephone Number Agency providing similar services to that of Neustar in the USA is an essential element of a full scale implementation of the proposed VRS, interim arrangements make early adoption possible in the meanwhile.

1.6 Call Routing

Call routing may occur through the use of a common number outbound and through the use of subscriber personalised (telephony and IP) number or through a standard telephone number, inbound.

1.7 Service Allocation, Prioritisation & Choice

During 'normal' service no individual calls should be prioritised (subject to contracting with their chosen provider(s) in the course of 'normal' operation.

The end user should be able to access all VRS service providers and be able to make individual choices

1.8 Emergency Calls

Emergency calls will be prioritised. Location and mapping detail would also be required where available (access to subscriber information). Real time text will be required in order to provide an alternative method of communication.

Calls will be initiated by:

- Caller places a call to emergency services and the relay service is automatically invoked.

Functional equivalence demands that users must not be subject to any undue delays (see KPI's) in connecting emergency calls.

This should be a service which resides 'above' competition. Effectively this should be owned by the existing 999 service, contracted to the VRS providers and subject to a National agreement to accept all calls regardless of provider.

1.9 Management

The service provider will at all times monitor the platform, interfaces and gateways that allow protocol communication and this information will be made available on request. Detailed management information should be available in real time.

The service providers will ensure that the delivery of all updates to the system, from the Call centre applications to the end user applications are managed in structured manner and remain available to the end user.

1.10 Billing

Billing information should be available (where appropriate) to the Call recipient and CP in real time. The bill payer should have access to information at near real time.

1.11 Demand Capacity Management

VRS service providers will monitor and deliver sufficient traffic handling capability at all times to deliver defined KPI's.

1.12 Access Requirements & Recommendations

It is recognised that the ever changing technology market will determine both the type and accessibility of common operating systems or web browsers for example that must be supported and this will be reviewed on a regular basis.

The service providers will provide details of which minimum requirements are needed to be satisfied in order to ensure the agreed quality of service. Examples of which may include:-

- Communications download and upload speeds
- Operating system types and versions
- Web browser types & versions
- Device functionality (e.g. Full qwerty, GPS)

1.13 Infrastructure Requirements & Recommendations

1.13.1 Basic characteristics

Sign language uses the movements and positions of the hands, eyes, mouth, face and body. Lip-reading supported by voice can be used together with sign language. Lip-reading can play an essential part of Sign Language communication and therefore is benefitted by VRS.

In video-coding terms, the scene with one signer may be regarded as containing a medium to high motion content. Sign language requires good visual reproduction of movements. For the application of sign language transmission in a person-to-person conversation at low bit rates (based on the use of dated equipment/network access at the user end), basic minimum performance goals will apply, for example:

- 25-30 frames per second at CIF resolution and a max. 0.4s delay, accepting occasional blur less than that corresponding to QCIF during medium motion.
- Sound synchronism better than 100 ms.
- End-to-end delay (latency) should be below 0.4 s.

These goals will differ depending on the type of network infrastructure used and will be quantified specified by the SP in advance of service launch.

Similarly, basic end user requirements should be specified in order that a specific quality of service can be delivered.

1.13.2 Broadband Access

Broadband access requirements will be defined by the Service provider based on the end user device, (mobile , pc, tablet) the type (fixed or mobile) and capability of network infrastructure (e.g. DSL, Ethernet, 3G, 4G...) used as well as the quality of service offered.

1.14 Service Initiation and Operation

All VRS systems should be simple to operate from the Call centre application to the End user application. It should be easy to load with adequate loading instructions and simple to configure. It should be self loading with minimum user intervention.

1.15 System Interoperability

Relay centres should work with different CP's and with each other using a standard for interoperability between different service providers (e.g. SIP protocol).

1.16 Malicious Call Handling

Provision will be made to handle and report malicious VRS calls made to the call centre from any service user and during the process of a call.

1.17 Call Handover

During peak busy hours priority calls (e.g. emergency calls) may need to be transferable between providers. Provision must be made. Clear processes and auditable call records must be maintained at all times.

In the event of '999' calls (1.8 above), 'Emergency Calls would be 'AUTOMATICALLY' transferred (passed through) to the 999 emergency call handling provider(s)

1.18 Call Back Provision

Caller's numbers/id's will be temporarily stored to enable call back provision where required. There will be clear policies and procedures in place as to when and how this will be done, reflecting the needs of Data Protection. The user may not be charged extra for this service, neither connection fees or for additional minutes accrued as a result of re-establishing the call. The caller information will be removed within a designated timeframe or at a pre determined stage of a process (e.g. at end of call)

The ability for the CP to contact the deaf end user with important messages must exist. Notification is required to end user that a video or text mail message is waiting for them (for example by Text or email).

1.19 Accessibility & Caller Validation

Subscribers to video relay services should have their own standard telephone numbers, which would be associated with an IP address. This would allow anyone to contact the subscriber from any device. Users would simply have to dial the phone number of the person they want to call (11 or more digits depending on where they are calling from). The call would be routed to the platform, then, depending on the phone number called and the parameters of the user's account, the platform would determine whether the call requires the services of an interpreter.

Geographic location details must be made available (where provided) for mobile calls (specifically emergency calls).

VRS calls with IP addresses located outside the UK will be charged.

1.20 Confidentiality

Confidentiality provision could be available through the use of VPN (increased bandwidth requirements) or through the use of an agreed standard encryption. This should only be between CP's if required as it adds another level of complexity for the end user.

1.21 Standards

Services provision should conform to the relevant ITU and IETF (Internet Engineering Task Force) communication protocols and specifications where available. Conformance to standards must be confirmed by the service providers in an auditable manner.

2 Service Provision

2.1 Service Code of Conduct

All VRS providers will sign up to a service code of conduct which will include: but not limited to:

- Specific evidence of minimum length of time gained as an interpreter in the community prior to working as an on line interpreter
- Qualifications
- Professional Standards
- Effective Communications Standards
- Evidence is required of subject matter experience
- Preparation and Assessment of any Call
- Applicability of Service
- Technical Support
- Confidentiality
- Continuous Improvement
- Complaints Procedure

2.2 Additional Services

The relay service may provide an option for the caller to see each other's communication (either of deaf caller and called party or vice versa) through a three way split screen function or caption telephony for example. The option of a video and text based mailbox will be available should the relay user be unreachable. These services may be at additional cost to the standard. Non VRS users will be able to reach the relay user through standard telephony services and at no additional cost.

Options to alerting users to incoming calls may include audible, visual or tactile signals

Provision will be made for the option of automatically passing numbers (e.g. typing) where required without the use of finger spelling.

2.3 Personnel BSL Accreditation and Experience

Interpreters providing national VRS should be registered with the appropriate registration body, currently NRCPD in England and SASLI in Scotland. They should be either RSLI (Registered Sign Language Interpreters) with NRCPD or Full Members of SASLI and have at least 3 years' post qualifying experience in a variety of domains including community practitioner experience.

2.4 Personnel Call Handling Training

Approved training with clear development paths for call handlers will be agreed and will include frequent personnel service quality reviews.

2.5 Personnel Subject Matter Training

Suitably trained subject matter specialists will be required to handle emergency calls. Personnel will be able to interpret effectively, accurately and impartially using the necessary specialised vocabulary.

2.6 Disclosure & Security Clearance

The provider will confirm that appropriate protection of vulnerable groups' clearance on both child and adult schemes has been secured where appropriate prior to engagement in the service. The provider is required to have a security management programme, in place, documented and auditable.

2.7 Confidentiality, Data Protection and Privacy

All staff will be required to have had annual confidentiality and data protection training. Records will be auditable. Clear governance policies must exist. Privacy will also dictate policy along with a list of the governance policies and procedures comparable to the parties at either end of the call entering into a private space. Steps must be taken to ensure the conversation cannot be 'listened' to by anyone within the contact centre except the relay assistant or supervisor. It may not be necessary for the relay assistant to have access to additional components of the conversation such as speech from the end user or secure touch tone key presses for credit card information for example. However in certain conditions the user may at their request require re-voice support. (e.g. renewal dates).

2.8 Conflict of Interest

Provision should be made to ascertain and manage potential conflicts of interest between staff, users and called parties.

2.9 Caller Welfare

Service should ensure the caller welfare is assured and that no note taking or record keeping of customer information which is not approved shall be kept. Provision for feedback during and after calls must be made and to conform to EU directives, a rigorous complaint handling process must be in place.

2.10 Regional Variations

Services will need to take into account the regional variations which are found in BSL. Staffing should reflect the ability to deal with calls from any part of the country.

2.11 Staff Welfare, Security and Safeguards

Provision should be made to assist staff in handling difficult calls, their individual welfare as a result of exposure to complex and often emotional situations, the staff personal security as well as call and on line safe guards..

2.12 Staff Indemnity

The service providers should ensure that sufficient professional indemnity is in place for provision of the service with specific clarity on the use and reuse of information (such as personal details) provided by either party during the call.

2.13 Staff Supervision & Monitoring

Calls will /may be monitored and supervised by senior qualified interpreters who have more than 5years' experience post registration. Records will be kept to identify areas for fault remedy and will form part of a service based continuous improvement programme. Supervisors may monitor calls to ensure quality of service.

2.14 Call Centres and Remote Working

Providers may be centrally located or use distributed call centres. Remote working from specified call centres will only be acceptable if part of a clearly articulated and approved national distribution & provision plan. Distributed call centres and remote working will be subject to the codes of conduct, monitoring, supervision, staff welfare requirements as if centrally located.

2.15 Client Service Training

Training will be available for the service user as well as the call recipient. This may need to be enhanced dependant on the subject matter and the potential severity/complexity of the call.

2.16 Client Technical Support

Full technical support will be available during opening hours. This will be provided in a variety of formats (e.g. chat rooms, messaging, voice calls, video calls).

3 Security

3.1 Information and Governance Policy

Clear and complete information and service governance policies must be in place. Each CP should be information governance compliant (e.g. NHS IG toolkit) to a recognised and approved national standard and be able to provide evidence of that compliance.

3.2 Confidentiality

Due to the nature of the service, confidentiality and associated processes must be in place.

3.3 Recording and Record Taking

Call recording and record taking by the VRS provider is prohibited unless with consent of both the caller and called party. Altering or disclosing content of a conversation will be prohibited unless the user requests a summary. All conversation will be relayed verbatim. Visual privacy screens are prohibited (except in normal transfer operations).

3.4 Third Party Data Processor

The service provider may use a third party for data processing. The third party must comply with the obligations on the service provider in respect of security and data protection and be liable to audit.

3.5 Security Management

3.5.1 Subscriber

The subscriber authentication services is used to ensure that only registered subscribers can have access to the services and accurate accounting should be implemented for the calls made by subscribers.

3.5.2 System

Systems level security will be in place to ISO 27001 or equivalent.

3.5.3 Physical Access

Provider is required to have restricted physical access to all areas of service provision. This will be documented. Controls to both grant and remove access will be in place at all times.

3.5.4 Network

Network vulnerability and penetration testing of the systems supporting the service provision will be conducted on a continuous basis. Data Centres for system hosting must have failover server redundancy. There must be at least one server designated as the failover device. Diverse routing for network connectivity at the data centre and at the call centre in the event of a network failure is required.

3.5.5 Call

VRS must offer equal levels of protection (e.g. though encryption) against eavesdropping in both legs of the call. Best effort considerations should be made in the case of the use of the public networks.

3.6 Compliance

Registered Information Governance compliant. VRS will adopt best practice principles of call centre management (e.g. CCA Call Centre Standard).

3.7 Access to Secure Information

Service providers will comply with ISO 27001 or equivalent

3.8 Data Protection Act

Conformance to Data Protection Act 1998.

3.9 Disposal of Information

Policies and procedures will exist to ensure the disposal of subscriber any other information as required.

3.10 System Contingency Plan

A clearly scoped and auditable risk management process and business continuity plan will be in place.

3.11 Standards and Certification

ISO 27001 or equivalent.

4 Reporting

VRS Providers will be required to match criteria specified by organisations purchasing the VRS service for call volumes and waiting times etc. In the absence of any specific criteria, the following will apply. VRS providers will deploy an automated real time Management Reporting System that collects and collates contact centre metrics and other data, aggregates and calculates live and historical data, with a reporting capability that will produce the specific information required by the VRS Standard and which can be accessed instantly online.

4.1 Number of Calls

The combined capacities of VRS providers should be able to handle an estimated 200 simultaneous calls during peak busy hour. Arrangements need to be in place such that emergency calls can be prioritised or rerouted at the start of the service provision.

4.2 Average Waiting Time

Target of 80% within 60 seconds in a reporting period (normally a month)

95% of Calls within 120 seconds in a reporting period (normally a month)

Average speed of answering less than 40 seconds in a reporting period (normally a month)

4.3 Maximum Waiting Time

98% of calls within 180 seconds in a reporting period (normally a month)

4.4 Number of Abandoned, Lost and Empty calls

Less than 5% abandoned calls in a reporting period (normally a month)

Maximum of 1 per 100 blocked during busy hour on any day

VRS platforms are expected to be IP based, if so any blocking protocol is irrelevant and non-applicable (Not erlang based)

Average of 5 per 1000 blocked

VRS platforms are expected to be IP based, if so any blocking protocol is irrelevant and non-applicable (Not erlang based)

4.5 Unanswered Call Wait Time (min, average and max)

Calls become unanswered if drop out occurs after 60 seconds. Real time records across the full period will be kept. The average unanswered call wait time during peak hours may not exceed 180 seconds.

4.6 Disconnection Causes

All disconnection causes are reportable

4.7 Average Call Length

Call length statistics must be maintained and be available real time

4.8 Service Reliability

The service must be available for 99.99% of the opening hours. Contingency programmes will be in place.

4.9 Interpreter Availability

Agent availability must be greater than 95% at all times.

4.10 Traffic Volume & Flow Patterns

Real time traffic flow information will be available and traffic flow trends will be made available at regular periods.

4.11 Other data

Will be defined as needed and specifically as the service evolves.

5 Quality Assurance

5.1 KPI's

KPI's will include but are not limited to:

- Number of calls
- Average waiting time
- Maximum waiting time
- Number of Abandoned, Lost and Empty calls
- Unanswered call wait time
- Disconnection causes
- Average call length
- Service reliability
- Interpreter availability
- Traffic volume and flow patterns

5.2 Technical Quality Feedback

Policy, process and reporting

5.3 Service Quality Feedback

Policy, process and reporting

5.4 Complaint Handling and Dispute Resolution

Policy, process and reporting

5.5 Service Audit

Annual & reportable

5.6 Quality Improvement

Continuous improvement programmes to refine KPI's, bearing ROI in mind.

6 Contract Considerations

6.1 Charging, Invoicing and Payment

Tariff structures typically give charges for a standard service with price breaks for volume. An additional service requirement say for wider hours of coverage or specialist interpreter training will attract premium pricing and be subject to separate quotation and negotiation.

A standard service typically comprises:

- Access to fully qualified and experienced Interpreter
- Operating hours Monday to Friday 08.00 to 18.00 (exc Public Holidays)
- System availability (Up time) as defined in section 4 above
- Concurrent call limits
- Regular technology improvements with notice
- Monthly Billing in arrears
- Standard payment terms i.e. 30 day
- Tiered volumes to be defined, for example:

6.1.1 Tier 1 <50,000 minutes per month

6.1.2 Tier 2 50,000 -100,000 minutes per month

6.1.3 Tier 3 >100,000 minutes per month

6.2 Service Delivery Date

Period of service

6.3 Service Promotion

Service contractors will need to consider how to promote VRS to their customers and clients. Various government, public bodies and deaf disability charities can assist in Service contractors in this, (e.g. DWP, DCMS, BIS, UKCOD, and Ofcom) both at launch and the ongoing service provision. Service provider responsibility after initial launch.

6.4 Regulation

Reference any regulatory frameworks at National or European level

6.5 IPR

Resides with service operator should not be restricted for interoperability.

6.6 Business Audit

Full annual reportable commercial audit.

6.7 Risk Management and Business Continuity

Approved and auditable plan required

6.8 Liability

Clear liabilities and penalties

6.9 Change Control

Policy and process, central approval if it impacts basic functionality or interoperability.

6.10 Subcontracting

Not without approval

6.11 Service Indemnity

£10m cover minimum

6.12 Anti-Bribery and Anti-Corruption

For end user, called party and service delivery – Policy and procedure

6.13 Fraud

Reportable and auditable.

6.14 Whistle blowing Rules

Clear policy and procedure

Information Sources

- [H Series Supplement 1] ITU-T H-Series Supplement 1. Application of low bit-rate video communication to Sign Language and Lip Reading.
- [T.140] ITU-T T.140 Protocol for multimedia application text conversation.
- [F.700] ITU-T F.700 Framework of multimedia service descriptions.
- [F.703] ITU-T F.703 Multimedia Conversation Service Description.
- [F.724] ITU-T F.724 Service description and requirements for videotelephony services over IP networks.
- [F.733] ITU-T F.733 Service description and requirements for Multimedia Conference Services over IP networks.
- [F.741] ITU-T F.741 Service description and requirements for audiovisual on demand services.
- [F.790] Telecommunications Accessibility Guidelines for Older Persons and Persons with Disabilities
- [FSTP-TACL] Telecommunications Accessibility Checklist
- [W3C WAI guidelines] <http://www.w3.org/WAI/>
- [SWG-A] ISO/IEC JTC1 Special Working Group on Accessibility <http://www.jtc1access.org/>
- [ETSI HF] <http://www.etsi.org>
- [E.135] ITU-T E.135 Human factors aspects of public telecommunication terminals for people with disabilities
- [E.138] ITU-T E.138 Human factors aspects of public telephones to improve their usability for older people
- Q26/16 Accessibility web page <http://itu.int/ITU-T/studygroups/com16/accessibility>