1. Appendix: Traffic Data
<table>
<thead>
<tr>
<th>Data to be reported</th>
<th>Definition for this data point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of calls attempted</td>
<td>all calls where a number has been inserted and the call button has been pressed by the end user. This includes calls to retrieve TC mail.</td>
</tr>
<tr>
<td>Total number of Caller Abandoned Calls</td>
<td>all calls where the caller 'changes his/her mind' and rejects or closes the call before it connects. [sip 486/487]. It is not possible to detect if the media fails. Does not include calls in a queue where the caller gives up.</td>
</tr>
<tr>
<td>Total number of Callee Rejected Calls</td>
<td>all calls where the server tries to connect to the callee but the callee presses the reject button</td>
</tr>
<tr>
<td>Total number of INCOMPLETE calls = total calls attempted - successful calls - abandoned calls - rejected calls</td>
<td>Arithmetic calculation</td>
</tr>
<tr>
<td>Total number of calls successfully connected – ie 10 seconds or more</td>
<td>a call where the requested media are exchanged and which lasts for more than 10 seconds</td>
</tr>
<tr>
<td>Total number of P2P calls successfully connected (&gt;10 seconds)</td>
<td>a call to another valid number or extension where the call lasts more than 10 seconds -</td>
</tr>
<tr>
<td>Total number of P 2 relay service calls connected (&gt;10 seconds)</td>
<td>a call to the designated relay service - either from PSTN, mobile, fixed line (voice) or from a TC installation; it was envisaged that this would be considered successful as long as an attempted call was made to the third party (even if the call was not answered). So this should be any call which invokes the relay service.</td>
</tr>
<tr>
<td>Total number of videomail messages</td>
<td>this is the number of calls where a video mail message is left or where the videomail recorded welcome is sent (whether or not the caller leaves a message). This should be a subset of successful P2P. This includes when the relay service leaves a videomail message.</td>
</tr>
<tr>
<td>Total number of calls to 112 (Emergency Services) (&gt;10 seconds) - all calls where a user entered 112 or similar</td>
<td>these are the genuine (not test calls) made to emergency service number</td>
</tr>
<tr>
<td>Total number of calls completed to 112/ (Emergency Services) (i.e. that made it through any call handling centre - through a first stage PSAP - this is a subset of A18)</td>
<td>these are the genuine (not test calls) which are made through relay services to the emergency service - ie these are end users whose message is translated from sign language or where there is voice carry over; the call is then handled by emergency in the usual speech/hearing way. In Sweden all calls go direct to 112.</td>
</tr>
<tr>
<td>Total number of PSAP Call Backs</td>
<td>these are all calls of more than 10 seconds duration, where the call has been made from the emergency service to a TC user</td>
</tr>
<tr>
<td>Total number of calls made direct to PSAP (emergency/non-emergency) - not through relay - this is a subset of A18</td>
<td>these are the calls made direct to the PSAP, without going through intermediate call handling or relay and which are managed directly by the PSAP (if necessary invoking the relay agent). In Sweden all calls go direct to the PSAP.</td>
</tr>
<tr>
<td>Relay service Average Speed Of Answer (RS-ASA) – Average, 1sigma, 3sigma, 5sigma.</td>
<td>This was meant to measure response time of the relay service - that is, it was to take into account the queuing of users and their time to pick up by relay. The aim was to report standard deviations from the mean.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Emergency Services Average Speed of Answer (ES-ASA) – Average, 1sigma, 3sigma, 5sigma.</td>
<td>This measure may not work as it was meant to indicate pick up time at the PSAP. This would only be valid when the call was direct. Pick up of a relayed voice call will be the same as the pick up time on any voice call.</td>
</tr>
</tbody>
</table>

### 1.1 User Analysis

| Total number of registered users | This reports the number of people who have registered on the REACH112 network and have agreed the terms and conditions of REACH112 participation. This was not monitored in the Netherlands. |
| Total number of Deaf sign language users | the sub-set of REACH112 users who are Deaf sign language users. Not recorded in the Netherlands or Sweden. |
| Total number of hard of hearing, speech/lip-reading users | the subset of REACH112 users who are hard of hearing. Not recorded in the Netherlands or Sweden. |
| Total number of users with sight problems | the subset of REACH112 users who have sight problems. Not recorded in the Netherlands or Sweden. |
| Total numbers of learning disabled users | the subset of REACH112 users who are learning disabled. |
| Total number of registered sign language interpreters in relay | the number of interpreters employed in the relay service (during this month). This may not be relevant in the Netherlands and Sweden as the relay service was not involved or organised separately. No sign language relay in Spain. |
| Total number of registered text operators in relay | the number of text operators employed in the relay service (during this month) - not available in UK, Sweden. Not used in France, Spain, the Netherlands. |
| Total number of registered speech operators in relay | the number of speech operators employed in the relay service (during this month). |

#### 1.1.2 Active User analysis

| Number of active users (users with >1 call per month) | the number of users who made ONE call in the month. |
| Number of Transnational calls made | this should refer to successful calls of over 10 seconds, where there is an international leg. This might include relayed calls as well as direct calls, if that data were available. This does not include relayed calls. |

#### 1.1.3 Call analysis

<p>| Total duration of all calls in the network (seconds) | This should indicate all network traffic and so includes duration of all attempted calls. |
| Average length of call (seconds) | This should be a calculation of total of all P2P, P2Relay, P2 emergency service, callbacks - where the call is more than ten seconds, divided by the number of calls in these categories. |</p>
<table>
<thead>
<tr>
<th>Table Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average length of P2P call</td>
<td>A calculation of the total duration of all P2P calls divided by the number of P2P calls above. The calculation is ONLY for calls over 10 seconds.</td>
</tr>
<tr>
<td>Average length of P2Relay service call</td>
<td>A calculation of the total duration of all relay calls divided by the number of relay calls above. The calculation is ONLY for calls over 10 seconds.</td>
</tr>
<tr>
<td>Distribution of call durations (put on separate worksheet)</td>
<td>There should be two distributions - one for P2P (over 10 seconds) and one for P2Relay (over 10 seconds) - not available in the Netherlands.</td>
</tr>
</tbody>
</table>

### 1.1.4 Time of day analysis

- Distribution of calls by hourly periods in the day:
  - This used all attempted calls.
- Analysis of work-leisure time calls – total calls made in period 0800 to 1800 (Mon-Fri) versus calls made at other times:
  - This section used all attempted calls.
## 2. Appendix: What is a call in the call stats?

<table>
<thead>
<tr>
<th>Scenario</th>
<th>How many calls?</th>
</tr>
</thead>
<tbody>
<tr>
<td>User A calls User B – tries to connect but no reply – A hangs up at 40 seconds</td>
<td>0</td>
</tr>
<tr>
<td>User A calls User B – connects – A hangs up after 6 seconds</td>
<td>0</td>
</tr>
<tr>
<td>User A calls user B – connects – but user B has unusable picture quality - hangs up after 15 seconds</td>
<td>1</td>
</tr>
<tr>
<td>User A calls user B – connects in voice but video media fails to connect – hangs up after 10 seconds</td>
<td>1</td>
</tr>
<tr>
<td>User A calls user B – says connecting/connected but no media displayed – hangs up after 15 seconds</td>
<td>1</td>
</tr>
<tr>
<td>User A calls User B – engaged – hangs up</td>
<td>0</td>
</tr>
<tr>
<td>User A calls User B – not available – connects to videomail – User A hangs up after 5 seconds</td>
<td>0</td>
</tr>
<tr>
<td>User A calls User B – not available connects to video mail. User A watches video mail message to end ~ 10 seconds – decides not to leave a message</td>
<td>1</td>
</tr>
<tr>
<td>User A calls user B – not available connects to video mail. User A leaves message – 30 seconds</td>
<td>1</td>
</tr>
<tr>
<td>User B calls video mail box – replays a message</td>
<td>1</td>
</tr>
<tr>
<td>User B calls video mail box – replays five messages, deletes 3 messages</td>
<td>1</td>
</tr>
<tr>
<td>User A calls hearing user D - automatically routed to Interpreter C – connects to User D – five minute call</td>
<td>1</td>
</tr>
<tr>
<td>User A calls hearing user D- automatically routed to Interpreter C – User D is engaged – A hangs up</td>
<td>1</td>
</tr>
<tr>
<td>User A calls hearing user D- automatically routed to Interpreter C – goes to User D voice mail – A declines to leave message</td>
<td>1</td>
</tr>
<tr>
<td>User A calls hearing user D- automatically routed to Interpreter C – goes to user D voice mail – leaves message</td>
<td>1</td>
</tr>
<tr>
<td>User A, after completed call to D, stays online and ask interpreter to make another call to hearing user E</td>
<td>No additional call- record only one call for the whole transaction</td>
</tr>
<tr>
<td>Hearing user D calls interpreter C – does not know the number of User A – abandons call</td>
<td>0</td>
</tr>
<tr>
<td>Hearing User D calls interpreter C – makes connection to User A – five minute call</td>
<td>1</td>
</tr>
<tr>
<td>Hearing user D calls interpreter C – reaches videomail for user A – leaves signed message</td>
<td>1</td>
</tr>
<tr>
<td>Hearing user D calls interpreter C – voice call quality poor – abandons call after 6 seconds</td>
<td>0</td>
</tr>
<tr>
<td>Hard of hearing user F makes text call to hard of hearing user G – connects – five minutes</td>
<td>1</td>
</tr>
<tr>
<td>Hard of hearing user F makes text call to text relay service and connected to hearing user H – five minutes</td>
<td>1</td>
</tr>
<tr>
<td>User A makes loopback call to test video quality - 5 minute call</td>
<td>0</td>
</tr>
<tr>
<td>User A makes a call to a test line – video message auto play – 3 minutes</td>
<td>0</td>
</tr>
</tbody>
</table>
3. Appendix: WP7 Swedish Trial reports

February-March 2012

Lisa Åström, Omnitor

The results are based upon the feedback and experiences from the hundreds of existing users in the Swedish Pilot. Section B1.1.2.5 of the ICT Policy Support Programme defines six services to be tested and implemented during the pilot.

- **P2P (Person to Person)** in which two registered users can contact each other and exchange a conversation. This was to be tested in groups of users using the same equipment.

- **P2RP (Person to Relay Service to Person)**. In this setting the caller can call an interpreter who will in turn make a voice call to a hearing user or vice versa in which a hearing person can contact a Deaf person.

- **P2ES (Person to Emergency Services)**. This setting involved the 999/112 operator to have sign language skills and to take control of the call.

- **P2RES (Person to Relay to Emergency Services)**. This setting was the same as point 2 where the Deaf user could call emergency services via an interpreter and vice versa if the police needed to check up on the caller they could return the call.

- **P2RES+ (Person to relay to emergency services +)** this is the setting when a non-registered user calls emergency services using a registered user’s account.

- **P2RES-roaming (Person to relay to emergency services-roaming)**. This is for Deaf people abroad who when calling for assistance (abroad) will be redirected to their local station interpreter who will make the call to emergency services in the region closest to that of the caller.

Trials and feedback reported here are focused on the services 1, 2 and 3.

3.1. The P2P service

There are about 3000 users with Total Conversation/videophone using their terminals for P2P communication both at home and at their workplace. The group of users are mainly deaf and hard-of-hearing using sign language to communicate, there is also deaf-blind users using sign language for transmission and text in braille for reception or enlarged text. About one fifth of the users are relatives also having TC terminals to communicate with their communication disabled family members.

There are 3 different sets of terminals, Omnitor Allan eC is a PC based softphone, Omnitor eCpad is a hardphone and eCmobile is an Android based application in smartphone.
3.2. The P2RP service

The sign relay service is running 7-22 weekdays and 9-17 weekends. In 2010 there were 300 000 relayed calls and 3721 unique users.

3.3. The P2ES service

112 Total Conversation was implemented in SOS Alarm PSAP located in Örebro, where one workspace was equipped with a Allan eC TC terminal semi-integrated with the case handling system Zenit. This is a P2ES-service but with a 3-party emergency call where a sign language interpreter is invoked in the call. To make this P2ES service operational 24/7 a separate 112 relay service was implemented to handle only the 112 calls and ready to participate 24/7.

3.4. Feedback and experiences

3.4.1. P2P eCmobile users

Previous experiences

Most of the mobile users are experienced with the older 3G circuit video calls technology with maximum 64 kb/s and tiny video size (approx. 4x4 cm). For the communication part, it requires 2 seconds to transmit video to the other end. So to receive feedback it takes 4 seconds in total. This limitation in quality and speed have adapted the way of communicating including “Sorry, what did you say” every 5th sentence, using one-hand-communication, and in particular get used to wait several seconds for response on what one just said.

3.4.2. Feedback on eCmobile

When eCmobile with SIP came for the Android smartphones, it was a revolution in the mobile video communication with increased transmission speed and better video quality.

Most of the users are happy with the technology and familiar with the possible problems. Weak network coverage will result in pixellation. Poor background light will make it hard to understand sign language, the users tend to search the environment for better front light. Some users ask for better camera angle since it is tiring to hold the arm outstretched to catch face and upper body.

One drawback with the earliest smartphones is the battery life and the registration keep-alive technique in eCmobile. In the worst cases, the battery would not last even a full day.

Some operators talk and/or plan to block IP-telecommunication in smartphones or try to limit the usage of “free calls”. This is a warning bell; hopefully the Swedish Post- and Telecom Agency will examine the issue and decide on some regulatory framework for the group excluded from the traditional voice telephony.

Omnitor have received a great deal of positive feedback on eCmobile in smartphones and also eCtouch in the bigger touchpads. For a long time there were no possibilities to call between 3G mobile phones (3G circuit video calls) and TC/videophones; many users have asked for
the functionality. It is among the first thing they mention, the possibility to call from mobile phone to family members using TC at home. The best thing with eCmobile is its handy size, and being reachable by having Total Conversation in one’s “pocket”. Many users have shared different situations when they were happy to be able to make calls on the go.

“I forgot my bag with wallet and keys in an indoor playground and was in car when I realized that one hour later. I used my eCmobile to call (by relay) and the bag was still untouched!”

“It was snowing outside, me and my deaf pre-school kids were waiting for the school taxi to arrive. After 15 minutes I called and woke the driver up! He overslept but hurried to pick the kids up!”

Allan eC and eCpad

Allan eC is a Windows based Total Conversation software. There are users with Allan eC in desktop computers, laptops, and computers with touch screens. There are also various configurations of Allan eC, some users are deaf-blind and use braille for text reception even if they choose to express themselves in sign language. Low vision users and elderly people can have Allan eC with text enhancer or a simplified version called Allan eC+. The adapted Allan eC+ has fewer buttons/settings and a web-based picture phonebook.

eCpad on the other hand is a physical endpoint and with mainly only one function, as a Total Conversation device.

3.4.3. Feedback on Allan eC and eCpad

Most of the users agree on that their devices are a vital tool for communication with family, friends, and also the community, authorities, care and so on. Once the devices have become a natural part of their telephony system at work or at home they hardly can imagine a life without the communication devices.

The technical problems with the devices often are related to network issues.

The first common problem is that the upload speed may be too low to guarantee good video quality; the lower limit is at least 400 kb/s at both directions. This is solved by upgrading the broadband to higher speeds.

The second common problem is the routers and firewalls that blocks SIP-traffic, ports needs to be opened or some NAT-traversal technique to allow medias to flow. In the past years there have also come routers that are said to be SIP-aware, but unfortunately only when it comes to audio, this has caused odd situations with some things working but others not. This is a huge problem when delivering TC equipment to companies and other workplaces with strict firewalls and complicate networks, many of the users are dependent on their TC devices to be able to carry out their work, for example calling customers. Often those cases require a great deal of discussion with the IT department to reach a solution.
Incompatible devices were also a nuisance. There are three videophone/Total Conversation providers in Sweden and one national video relay services, the launch of new program versions or platform upgrade often caused incompatible call cases. But thanks to regulatory and standards most of the incompatibilities are solved and are now very rare.

“It is sweet to be able to express in one’s mother tongue – sign language in the phone calls”

“My daughter moved to Canada and brought her videophone. I love the moments when we are talking in the phone and also play with my grandchildren through video.”

“Now I can call by myself and not asking my hearing family members for errands”

“The quality of my life has increased, now I can see and talk to friends that live far away and keep my social life running even if I am sick and have trouble to get out from my house”

“I am with deaf association, the TC equipment has increased our efficiency, as we can call and discuss issues. Once I was having fever, but did not need to cancel the meeting. I was there by my TC device.”

3.5. P2R

The relay services are an important part of the Total Conversation service. For some users 80-90% of their everyday calls are relayed calls to relatives, child care, community services, and authorities. The relay services have grown over the years, with more interpreters, more workstations and improved opening hours but there are still users in queue, users that need to be able to call midnight or in the very early morning.

In work places, the Total Conversation devices contribute to users being more independent workers. It also leads to higher capacities and responsibilities for the disabled in the labour market. Total Conversation and Relay services are widely used for distance interpreting as well as communication with the voice telephony world.

The Social Insurance Agency and the Swedish Public Employment Service can provide Total Conversation as communication aids for the disabled, the applicators have to demonstrate their needs.

3.6. Feedback from relay calls

Before the queue system was implemented it was frustrating to call again and over again when VRS was busy (this occurred every second call). This caused stress especially when there were important calls to do. Now with the queue system, even at rush hours, one very rarely get a higher number than 3rd person in queue.

It is also troublesome when the VRS is down or there are technical problems. Omnitor support receives several calls when there is problem with VRS from frustrated users who needs to be able to make relay calls.

One user who calls VRS on average 4-5 times a day reports that it is working most of the time; sometimes the video gets pixellated where the hands are moving. Very rarely the video freezes, this happens maybe 1-2 times a month (1 out of 100). Real-time text is very useful for typing addresses and phone numbers.
In some workplaces both the deaf employer and his/her supervisor have one TC device each, the feedback from the supervisors and the users have been positive. The improved communication, either direct or by using a remote interpreter have increased the efficiency and led to a better work atmosphere.

The relay services are essential for many users in their everyday life as well as in the labor market.

“Now I can participate in the spontaneous meetings at work by using distance interpreter. It is highly valuable in my work.”

“In the past when I was limited to text relay service, people I was calling disliked the slow turn taking and the impersonal tone. Now with video relay I get so much more out of the calls as the relay is showing the expressions and the tone in the call. The conversation also turns smoothly and my hearing relatives and friends now appreciate to talk to me even by the phone. What a difference!”

3.7. P2ES

In June 2011 it was announced that 112 now was accessible by TC/videophone thanks to the project REACH112. One TC terminal was installed at PSAP SOS Alarm in Örebro and also a separate REACH112 relay service operating 24/7 was set up to participate in the REACH112 emergency calls. Ever since then there have been a few dozen REACH112 emergency calls, both real emergency situations and from users that were too curious not to make test calls.

3.8. Feedback from emergency calls

Focus group interviews and also survey with the 20 PSAP operators showed a clear change in their attitude towards REACH112 Emergency services. In the beginning most of the operators were suspicious and felt insecure regarding displaying themselves in the 3-party TC call. After 6 months 17 PSAP operators out of 20 were positive and thought it was an important community service.

“It sucks that the project is reaching its end when we are getting used and happy”.

“Of course we should keep the service running!”

Two deaf users who have called 112 when in emergency have shared their experiences. Both mentioned that they had the “REACH112 – call 112 with your videophone” poster in their mind when in emergency.

The first one who had earlier 112 experiences depending on the technique available;

asking a hearing person to call using paper and pen

using SMS112 where it took approx. 20 minutes for communication back and forth by text messages

The user really embraced the REACH112 emergency call and how it was proceeding. At first it was funny with the 3-party call and having the PSAP operator in one of the windows and
the relay agent in the other, but after a while the call went smoothly and the ambulance arrived within 10 minutes.

The other user was an elderly deaf person with stomach pain who asked his deaf wife to call 112. Unfortunately the wife felt that the reduced video screens in the 3-party call were too small to understand the relay agent, the video also pixellated. The husband, who was in emergency, had to take over the call. Otherwise they were happy with the enhanced 112-service, to be able to call 112 with TC/videophone. They wish to have adaptive video screens so one can choose what ratio PSAP operator and sign language interpreter should have in the screen.
4. Appendix UK REACH 112 Trials

May-July 2011 compared to April 2012

Prepared by Christopher Coleman & Jim Kyle

Summary

Systematic user trials were carried out in May/July 2011 and in April 2012. These were designed to determine the extent to which the service had improved in this time period and the extent to which the confidence of users had improved. This report results from a three part set of trials: Person to Person (P2P); Person to Relay (P2RE) and Person to Relay to Emergency Services (P2RES). We monitored 49 P2P calls in May 2011 and 58 calls in April 2012. The calls were scripted and the information transferred between users from the script was measured to determine how useful the medium was for information exchange. The results demonstrate significant improvements in all aspects and show a Total Conversation network which is maturing and stabilising.

4.1. Purpose of Document

The document provides an analysis of trials at the start and near the end of the UK pilot where users were to call the relay service or vice versa.

To determine the quality of P2P calls, scripts were provided and the information was to be signed to the recipient. The recipient wrote down the information and this was later analysed to verify the effectiveness of the medium. We expect there to be quality at a level to permit lip reading and use of signed language in this case BSL (British Sign Language). The results of both sets of trials are analysed here and compared.

4.2. P2P calls

4.2.1. Users

When we first launched the MyFriend service and the free software to users we were required to organise training sessions and workshops to promote and demonstrate how to use it. This mostly stems from the fact that many Deaf people were not computer literate. The original trial saw inexperienced users getting to know the software and starting to use it more and more frequently. The second set of trials saw users with one year’s experience using the system.

Users varied in age; ethnicity; computer literacy; level of Deafness etc. Users did not necessarily know each other but were provided with names and numbers to call. They were arranged in two groups – staff of the Centre for Deaf Studies (A) and an experienced group of elderly people (60 years +) (B).

Devices
There is a range of devices used during these trials:

smartphones; tablets; Netbooks; laptops/PC’s and videophones.

The range of devices which can run the software is one of the strengths of the myFriend service. Used on a smartphone allows users to stay connected at all times and in all locations where a voice call can be made.

4.3. **May 2011 – P2P Trial Results**

In the space of two weeks, Group A made a total of 18 calls 7 of which were videomail. There was 1 failed call. Group B made a total of 31 calls 7 of which were videomail and 4 were failed calls.

![Successful Calls May 2011 - P2P](image1)

**Figure 41**: Successful P2P calls May 2011

![Total Video Quality May 2011 - P2P](image2)

**Figure 42**: rated video quality in the call May 2011
Figure 43: Ease of Communication rating

The results were less than satisfactory. This can be explained in terms of the inexperience of the users and the fact that a major revision to the software was only released a short time before the trial took place and major improvements were made shortly afterwards.

Although 61% of calls were successful ie over 10 seconds in duration, the video quality was not good. Only 37% of calls were deemed good visually by users and only 45% of calls were easy to understand and exchange information. On the whole, 73% of calls had suitable video for communication.

Group A had a shorter length of call (average 54.5 seconds) perhaps reflecting their unfamiliarity with the software while the more experienced older group were able to make longer calls (average 168 seconds).

Information Transfer

In transmitting the information in the script 25% of the information seemed to be lost. However, it is important to remember that many of the participants had English as their second language. Also it is not in the culture of Deaf people to write information. The task of transferring information from a script was seen as complicated to some users. This was discussed and new scripts were devised to try to minimise the effect of language modality.

4.4. April 2012 – P2P Trial Results

Whilst the May 2011 trial was designed for one group of users of similar characteristics and another group who were ‘beginners’ in use of the myFriend software, the April 2012 trial saw experienced users making calls to one another. The location and connectivity was diverse and allowed for a more realistic examination of Total Conversation.

There were 58 calls 2 of which were messages. There were no failed calls.
All calls received were successful and the few video mails which were left were rated as clear and easy to understand.

For the most part calls had smooth and clear video quality. A small number of calls with problems were shown to be due to network problems.

Ninety five percent of calls were deemed to be OK or good. The average length of calls was now much longer at 289 seconds.

Transmission of information from the scripts to the other person were all successful with 100% of the information written down correctly. There is clear evidence for much better performance towards the end of the pilot as shown in the Table below.
Table 41: Ratings of OK or Good

<table>
<thead>
<tr>
<th></th>
<th>Picture Quality</th>
<th>Ease of Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2011</td>
<td>73%</td>
<td>75%</td>
</tr>
<tr>
<td>April 2012</td>
<td>95%</td>
<td>98%</td>
</tr>
<tr>
<td>Increase in efficiency</td>
<td>22%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Users are clearly more able to use the system effectively in the latter stages of the pilot.

4.5. P2Relay Calls

The relay service was set up and managed by the Centre for Deaf Studies. The service was distributed to three centres and calls were connected to the available agent, according to availability.

The aim of the relay trial was to determine the effectiveness of such a service and to evaluate the quality of the audio and video. No scripts were provided. The relay agent was responsible for asking the hearing party to provide information on audio quality and usefulness of this type of service. The relay agent then answered questions on audio/video and effectiveness of the service separately after the call. The myFriend participants had feedback forms of their own to complete.

Although the person to person service had been running since the start of the project, the relay service was new during the pilot.

The same users from the person to person trials took part in the relay and a similar range of endpoints was used.

4.6. May 2011 – P2Relay Trial Results

We set up a specific time period and then monitored the calls. Group A (as described above) made a total of 19 calls, 7 of which were failed calls. Group B made a total of 23 calls, 1 of which was a failed call.

![Figure 47: successful calls (May 2011)](image-url)
Average length of call was 166 seconds (group A) and 210 seconds (group B).

4.7. April 2012 – P2P Trial Results

In April 2012, in a specified trial period there were 58 calls, 2 of which were video mail. There were no failed calls. Ninety-six percent of the hearing people who were called rated the service as good.

Ninety three percent said it was easy to understand the relay interpreter.
Sound quality could be improved as only 70% of calls judged the sound “Good” although considering the average we get a total of 92% from the hearing receiver. The interpreter has a higher quality of sound coming in with 96% rating in the “Good” alongside 4% “Not so Good” which is an indication that there still is some work left to be done for sound.

All of the interpreters/relay agents and all of the hearing people contacted considered this to be an effective form of communication.

In tabular form:

<table>
<thead>
<tr>
<th></th>
<th>Picture Quality</th>
<th>Sound Quality</th>
<th>Ease of Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2011</td>
<td>90%</td>
<td>89%</td>
<td>94%</td>
</tr>
<tr>
<td>April 2012</td>
<td>94%</td>
<td>95%</td>
<td>94%</td>
</tr>
</tbody>
</table>

*Table 42: improvement in quality by the end of the pilot*

By the end of the pilot the use of the relay service had become commonplace and users rated it highly. The structured trials indicated performance improvements in almost all aspects.
5. Appendix France: REACH112 User Trials 1

Summary: This document describes the various experiments performed in the context of the REACH1212 project, their goals and their methods of implementation in France. It also includes a description of the users of this country.

5.1. Introduction

With the objective of enabling people who are unable to use conventional telephone services to call another person in an emergency situation, the REACH112 project aims at making possible:

- Person to person calls using Total Conversation (video, sound and real time text)
- Person to person calls via the services of interpreters or transcribers (relay center services)
- Calls to 112 in order to obtain emergency help of doctors, the police or fire-fighter.

This project depends on high user involvement in order to develop these services, services that must undergo extensive tests and then be tried out in real situations. Users unable to telephone were thus invited to describe their difficulties and aspirations, to participate in ordinary person to person (P2P) calls using Total Conversation, to report on their experiences and opinions of using relay centers, and then to test and use Total Conversation access to the European emergency number, 112, for an experimental period.

This report broadly describes how the various tests and experiments were set up in France. It summarises the ways in which users were informed and supported. As we report in the third section, some users were already accustomed to using Total Conversation in P2P calls or via relay centers, while for others TC was new. In this section we also present the profiles of users who volunteered to be kept informed of the progress of the REACH112 project so that they could participate in the tests and experiments that interested them. The final phase of the REACH project providing access to 112 in Total Conversation for real emergencies implicated a larger population including users who were accustomed to using a relay center. The final section describes the use made of these services and the profile of users who gave us this feedback.

5.2. Stages and features of the experiments

5.2.1. Convert needs into a system to be implemented

The project is focused on the fundamental issue of access to emergency services in a range of communication modes. Thus the initial research and tests consisted of determining the possible means for contacting emergency services taking into account the needs and wishes of the users concerned and the organisation of emergency services in France.

The first phase of analysis of the requirements was based on a literature review, a request for testimonies from people unable to telephone and visits to call centers. Here, we will not go onto the details of this review and analysis which was the subject of an earlier deliverable (D2.1) and will be the subject of forthcoming scientific publications by the RDE unit of Websourd with comparisons of the situation in other countries. Nonetheless, it was from this starting point that the French pilot has endeavoured to create a platform to receive calls with staff that are able to take these calls in French sign language, as well as by voice, with return calls in real time text, and to pass on the information to the local emergency call centres. This initial survey identified the broad outlines of the socio-technical venture and initiated a process of user centred design.
5.2.2. Platform design involving both users and operators

A set of simulations and tests calls allowed us to develop a socio-technical platform for receiving emergency calls in Total Conversation, then to test it with a growing number of users. The characteristics and findings of this user focussed design process are described more fully in the section on the Focus Group. We do not present the details here. We describe the main steps of this process which allowed us to move progressively from simulated calls in the form of role plays, to more fully informed and realistic experiments and onto the phase of real emergency calls. We highlight the progressive involvement of increasing numbers of users and the production of various forms of information and accompanying tools.

• Simulate practices, identify the actors and their needs

Following major user recruitment activities in September 2010 and to enable users to participate in the project experiments, a first phase of simulations brought together the different actors in the project, including emergency services and relay centre professionals. This entailed the creation of a questionnaire distributed both in print and also in a bilingual version on a website, and information activities in the various social networks involved. From this followed a description of user profiles and the determination of their needs in terms of equipment and support. This was the subject of deliverable D.4.1, and these aspects are not repeated here. However, we note that depending to their situation, French users could use their videophone (Oplink) or Elision account to call, via their relay centre, video conferencing software so as to make calls using Total Conversation (free ElisionReach account accessed with a password), a prototype cell phone using RTT (Orange users), or a website dedicated to 112 calls in the REACH112 project (http://112.visioassistance.net/). Users with ElisionREACH accounts (created for the project), in particular, were invited to contact the technical support platform to verify the quality of the speed and to receive help. A help centre (contact point) was also set up by WebSourd and Orange to test conversations using this software.
Supervised experimental calls

In September 2010, the commitment of these recruits helped initiate three experiments, which engaged, within the context of tests users expressing themselves in different ways. These participants contributed to the design and implementation of Total Conversation emergency call processing. These initial experiments, which also included the elderly, enabled us to assess the requirements of this population. This phase resulted in the production of a set of background documents on the project (brochure, flyer, dedicated space on the WebSourd site: http://www.websourd-entreprise.fr/spip.php?article96, conferences). Furthermore, during this phase we were able to film videos designed to explain to future users the procedures used for handling an emergency call by the project REACH112 project. Finally, it allowed the validation and dissemination, in June 2011, of a consent document for users wishing to participate in the next more ambitious phase of experimentation, involving simulated emergency calls from their home or office.

A transition period of two months in the summer of 2011, allowed us to recruit a last group of users and to collect consent documents. This period also provided an opportunity to conduct various experiments as part of the training of the REACH112 emergency call center operators. They had to be able to handle real emergency calls in a restricted mode (fax and SMS) from September 14, 2011. This fax and SMS service is the result of a French government initiative to provide some form of emergency service to the deaf and hard of hearing pending the outcome of the REACH112 project. The details of the training program for emergency call centre operators are described in deliverable D. 5.2. The particularity of the REACH112 experiments during this period was that it allowed the operators to participate from their real job-stations, to familiarise themselves with the interface, develop their way of collecting and entering emergency information and experience the different types of relationship that are built with callers through the various media. Although carried out remotely, and also involving users in real calls (at their workplace), these tests were particularly closely supervised. Users were asked to indicate at the beginning of the communication that it was test call, and if needed operators had to request confirmation. This procedure worked well. Three steps can be distinguished:
Three 2h sequences of experiments involved employees of Websourd who were not normally part of the project, calling in their work setting. Nevertheless, they could be adequately informed and monitored during these calls. The main aims were to test the procedures for the description of emergency scenarios to be acted by users, to collect their opinions both directly and indirectly, and to identify important points to be highlighted in the user manuals that were being created. It also allowed the operators a first experience with their interface in a real situation and an awareness of what the multimodality means in the context of emergency situations.

Three more 2h sequences of experiments were filmed from the perspective of the interface for receiving calls and were followed by focus group discussions with the operators. They were an opportunity to test different methods of coordination between the emergency operators and evaluate the various contributions provided by the relay center service (interpretation and speed-typing). Again the users involved were employees of Websourd, independent of the project, and who had previously participated in the initial tests. Their contribution has helped design and test a follow-up form for recording the details of calls made by remote users. They were also interviewed on the spot following the tests. The analysis of data from these experiments led us to rethink the distribution of tasks on the platform and propose a redistribution of roles between operators at level 1 (managing the communication with users) and level 2 (communicating with local emergency services).

Finally, four 2h sequences of experiments were conducted with deaf and hard of hearing employees of Orange, scattered throughout the France but familiar with technologies of remote communication, and who could be assisted and backed up by peers in the same organization. The objective of these experiments was to test, using the same scenarios, calls to 112 in total conversation (with a variety of terminals, including from a mobile phone using real time text) and SMS messages to 114. Calls to 112 and 114 were handled by the same operators, as the REACH112 project was coupled with the national platform for receiving calls via fax and SMS. As well as contributing to the training of operators (who would soon be receiving receive real emergency calls as part of government initiative), these experiments highlighted the value of calls in Total Conversation, and helped to identify the specific competences required for synchronous communications involving video (REACH112) versus asynchronous and non-visual communications (SMS-114).

The involvement of deaf and hard of hearing employees from two partner organizations in the French Pilot could have led to consensual opinions on the project. The fact that these employees were themselves concerned by the accessibility of emergency services on the one hand, and could express themselves through internal professional contacts and thus mitigate their concerns about image issues and competition on the other hand, has led to users expressing themselves freely and candidly. In particular they criticized certain practices of the emergency center operators and the limitations of the technology which did not allow mobility and quick access (computer software) or modes of interaction that reduced responsiveness and understanding (SMS). This feedback has constructively contributed to the improvement of the platform. Some of these remarks and opinions made by deaf and hard of hearing employees have been included in the user feedback section.

Putting the system to the test

September 2011 was marked by the close of user recruitment, the distribution of user manuals and instructional videos on the project, a reminder of contacts available in case of technical problems, and a request to the first users (who had signed the consent document) to make false emergency calls to the real emergency call center for the deaf and hard of hearing. Indeed, from September 14th this platform was handling real emergency calls to 114 sent by fax and SMS. Users participating in the REACH112 project could call twice a week, using the emergency scenarios, during time slots of two hours. Call processing was performed up to the stage of transfer of information to local emergency services who indicated the response that they would have given in a real situation, but without actually triggering the deployment of the emergency service. Call distribution was controlled so as not to saturate the platform, and depending on the availability of operators handling the calls in sign language or real time text in order to correspond to the communication mode specified by users in their response to the
questionnaire at the beginning of the project. The scenarios were also distributed according to their individual and family profiles, so that they could act more realistically and more readily evaluate this experience. Users were asked to complete and return a follow-up form for these calls to report problems and give us their opinion. They were also free to send us comments by text, video, email or contact us at our offices. Their advice was particularly sought so that we could improve the public REACH112 site interface. The operators also had to record all calls and report any technical problems or suggestions to improve the interface. These follow-up documents were often followed by informal comments on their feelings and the way in which the calls were handled.

5.2.3. Supporting users and testing the robustness of the system

An additional step was taken in early November, allowing the platform to be contacted 24h/24. As the number of operators able to handle calls in FSL was not sufficient to ensure a continuous presence, automatic redirection to an operator communicating in real-time text was implemented in the absence of FSL operators. Users had been informed of this situation and had received some recommendations for ease in making communications by text only.

To provide the opportunity to test an emergency call for all users who had expressed this interest when signing the consent document, a period of experimentation remained open from mid November 2011 to mid January 2012. It also allowed several technical problems to be to identified and perform multiple updates of the operator interface. For this reason, and to allow a gradual increase in call volume, invitations to participate in these experiments were proposed over a period of a week, and then sent to another group of users, after a short break to allow interventions on the platform or on the interface. So that users could choose the modality in which to make test calls, a schedule indicating the availability of operators able to receive calls in FSL or use voice / return text was sent weekly by the CHU and relayed by Websourd to invited users.

This organization of the experimental phase allowed a large number of users to participate, and perform a progressive increase in the volume of calls. In two cases the emergency service as actually deployed in response to calls that were indicated to be tests. Although unintentional, these two cases demonstrated that the system worked very well. In December 2011:

• The proposed test periods were extended, and users were invited to call in with emergency situations that they themselves had already experienced, while clearly stating early in the communication that it was a test call.

• Three periods of with an overload of calls were held, each lasting 2 hours, to test the robustness of the platform as well as the coordination abilities of the operators.

• Two calls in FSL, with visible wounds, were organized with the help of a made-up user, who had experience of helping in first aid training and was accustomed to such simulation.

Following these test calls, both the operators and users were requested to return follow-up reports.

Technical assistance, ongoing support for users and encouragement to make P2P test calls were maintained throughout the entire project. These incentives were reinforced during the transition to the phase of calls for real emergencies.

❖ From December 2011 to February 2012, reminders were sent to encourage reticent users to explore the possibilities offered by calls in Total Conversation, whether for emergency calls or calls from person to person. To support utilization of TC calls by users, all user manuals and instructional videos were placed on a dedicated web site accessible to the visually impaired (http://www.websourd-entreprise.fr/ExperimentationReach112/), and on a USB key, with all of the contents in both French and FSL.

❖ In addition, in this effort to encourage users to explore the features and communication procedures of communications in Total Conversation, two sessions of distance games using this media were proposed in December 2011 and February 2012. Designed by François
Lefebvre-Albaret, a computer programmer with the Websourd EDR department, this game involves not only calling other people to gather clues that they must share, but also to see what their interlocutor looks like. Based on this information, players must find out who among the participants is the thief. The rules of the game and the clues were provided in both French and FSL. These games involved a dozen players and lasted about 2 hours and prompted many cross calls. They allowed users to discover and use features associated with calls in Total Conversation.

(http://websourd.nnx.com/~mediav0/information/reach112/13122011/information.html)

❖ Finally, an experiment of international calls in Total Conversation was proposed in early December to a restricted group of deaf, hard of hearing and deaf people to test the contribution of the system to communicate with people in partner countries of the REACH112 project. These calls were made during the month of January and early February 2012.

The statistics and evaluation of international calls as well as calls from person to person are not detailed here and are reported in deliverable D.6.2. Spontaneous comments associated with the discovery of these practices are presented in the analysis of user feedback and the presentation of case studies.

5.2.4. The experimental service in a real-life context

After having allowed a large number of users to test these calls P2P as well as to 112, 24h/24 and for the operators to have the opportunity to practice coordination procedures and how to qualify emergency calls in Total Conversation, this experimental test period was officially closed. The opening of the platform to real emergency calls was proposed from mid-January 2012, exclusively for registered deaf users with the necessary equipment. The panel of users concerned all users of the Elision relay center, whether or not they had responded to the initial questionnaire.

An information campaign had been conducted about this possibility and the conditions for these calls. For this, a bilingual document on ethical issues, was released in advance by mail and posted on all interfaces from which calls to 112 were possible as part of this project (http://websourd.nnx.com/~mediav0/information/reach112/17012012/information.html). (The main point of this document on ethics was to inform the public that this experimental service allowed for real emergency calls until the end of April 2012 (subsequently extended until the end of June 2012), and remind them that in case of technical problems, users should contact 114 by fax or SMS. A new information campaign was made that notified the end of the experiment and the possibility that the French government might build on the findings of this project.

During the period in which the platform was open to handle real emergency calls in Total Conversation, 14 calls were received, of which 9 were real emergencies. The operators continued to file reports in a follow-up document with anonymous information. Permanent 24/7 call taking and technical support were also maintained, and users could still learn about the project or report their thoughts. Lastly, a final focus group with the operators, including self-analysis of their practices, was held in March 2012. In addition, a series of interviews was undertaken in June and July 2012 with a diversity of volunteer users, including several people who had been rescued through REACH112. Similarly, interviews were conducted with all operators who had dealt with real Total Conversation emergency calls. The analysis of these data is in part presented in the case studies. They will also be the subject of presentations and subsequent publications by the Websourd EDR group.

5.3. Ethics and Sources of Assistance for the experimentation

5.3.1. Information and assistance for users

In addition to the dissemination of paper documents about the project (posters, brochure, fl–yer) and public presentations made by the French consortium partners, three websites, a Facebook page and a USB key, allowed the diffusion of information about the project in versions accessible to all:

Deliverable D7.1 REACH112 Appendices v1.5
- **The European site**, with a version in French and also in FSL, describing the whole project: 
  http://www.reach112.eu/view/fr/

- **A spot about the project**, bilingual (French-FSL), explaining the project on the Websourdl site with the activities and stages of the French pilot as well as bilingual user manuals (French-FSL): http://www.websourd-entreprise.fr/spip.php?article96

- **A page on Facebook** devoted to the project and regularly updated by Orange, with news about the project as it progressed: http://www.facebook.com/REACH112France

- **A website** in French gathering all information documents, user manuals and instructional videos, accessible to the visually impaired and blind:
  http://www.websourd-entreprise.fr/ExperimentationReach112/

- **A USB stick**, containing the same information, manuals and videos, in fully bilingual versions, French and FSL

The information disseminated by email to users involved in the project was also bilingual (French-FSL). Similarly, hotlines proposed by WebSourd allowed users to express themselves by voice / with text back, by text-only, or in FSL. Requests for information or making comments could be done by videophone as well as by email. The French pilot had an email address that was constantly read: reach112france@gmail.com. Throughout the project, technical support was available to help users (via email, instant messaging, videoconferencing or remote intervention on terminals): support.reach112@elision-services.com

### 5.3.2. Ethical aspects

In addition to the project information described above, three documents explained the involvement of users in greater detail:

- **Stage 1- Interest in the REACH112 project.** This consisted of a *questionnaire* in French and in FSL, on paper and on Internet, distributed by email and during public meetings about the project. This questionnaire allowed us to gather information on the profile of the users, their communication skills and their equipment. It helped us to suggest ways to make calls using Total Conversation for users who did not have a videophone or software allowing calls to relay centers. It also enabled us to invite users to participate in the project and to provide support in an appropriate manner. Users who responded positively to the questionnaire were invited to take part in all the project experiments: to test P2P calls, to make simulated emergency calls to the REACH 112 number (providing they had signed the consent document), to participate in P2P games, and to make international calls.

- **Stage 2- Calls to 112 for false emergencies.** To participate in this experiment, users had to understand that it was only testing and that the platform could not deal with real emergencies. They promised to give us their opinions. They were asked to read a *consent document* issued in French and FSL, sign it and return it to us by post or email. While this method avoids users making a decision too hastily, an automated online return would be preferred: http://websourd.nnx.com/~mediav0/information/reach112/08112011/consentementFauxAppels.html
Stage 3 – Calls to 112 for real emergencies. An ethics document was written in French and LSF to inform users the possibility to call 112 in total conversation for a fixed period only. It was stressed that the conditions remained experimental. One objective of this document was to remind users of the possible alternatives in case of technical problems (ie call 114 by fax or SMS). Of course no commitment was possible. Confirmation or a receipt that this ethics information had been received was requested. This document was distributed to all those who were able to call the platform, thus, to all users who responded to the questionnaire as well as all users using the services of the Elision relay center. This information was also posted on the interfaces for calls to 112:

http://websourd.nnx.com/~mediav0/information/reach112/17012012/information.html

The availability and accessibility to information has been a point of vigilance. Documents about the project, user manuals, rules of the game and of course ethical documents have been proposed, translated and published in written French and FSL by Websourd. To this was added a contact email address and a hotline, by email or videophone, for any request for additional information.

For ethical reasons, this system was supplemented by:

- a request for user feedback on the difficulties encountered or the changes they would like to see made (especially in Phase 2 of test calls).
- a sociological analysis of the consequences of these interactions, of the coordination of the operators and their relationship with users and of the information about the emergency.
- anonymous monitoring of the conditions of reception and processing of calls received by the emergency platform (in particular the real calls in Phase 3).

Generally, each step of commitment to a new phase of the project was preceded by meetings bringing together different players in the French consortium. These reviews focused on the network technology and development of interfaces (the 112 website, the operators’ interface), an ergonomic analysis, training of staff and the implementation of the platform for receiving calls, as well as the involvement of users and analysis their feelings and the professional practices of the operators.

5.3.3. Data collection

This ethics procedure, as well as an analysis of ongoing social changes, was based on the establishment of monitoring and collection of data concerning the opinions and communication practices of users as well as that of operators. It was characterized by:

- the systematic organization of focus groups involving users, invited professionals from relay centers and emergency operators, during the period of call simulations and experiments;
- the systematic distribution of user feedback sheets for the tests at distance, allowing users to summarize their call experience, to report any technical problems, and to share their opinions and feelings. Such records were created for:
  - Experimental calls to 112
  - international calls
  - calls made during the P2P game;
- the possibility, during the entire project, for users and also the operators, to contact a hotline or to send emails, written or video, to share comments and more spontaneous thought;
- the possibility, during the entire project, to report problems and receive technical assistance;
• a shared file tracking all calls received by the operators, either during the experimental phase (phase 2) or during the real call phase (phase 3; for which returns were then anonymized). This file recorded the dates and times of calls, the emergency service concerned, any technical or interface problems noted as well as comments by the operators on the way in which the call was handled.

5.4. Profils of users who participate in the project

We here describe the profile of the 445 people who answered the REACH112 questionnaire and so reported themselves interested to be regularly informed about the activities and the experiments in this project, so that their home (about 800 adults in total) can participate in the tests which interest them. We then describe the profile of the home relay center (Elision) users who agreed to speak about their practices of this service. As a reminder, all the homes using Elision was informed and invited to true emergency calls at the end of the project. They represent a population (variable depending on subscription and unsubscription periods) of 450 homes and 200 business sites. Their uses are described in the final paragraph.

5.4.1. Voluntary users profiles for testing and experimentation

• Socio-demographic profile

445 people (contacted during public presentations, via posters and mailings) answered the REACH112 questionnaire, so engaging their families in the experiments, meaning almost 800 adults in total. It is important to note the great proportion of families with children among the respondents. Women are more represented, as well as the category of 30-50 years.

Home composition of the 445 respondents

Gender and age of respondents

People living alone are represented in all age groups, although they are more numerous in the category of 30-40 years, and especially among older people involved in this project. In fact, half of them live in isolation.
Mostly working people participated in this project. Only a quarter of users is retired, has a pension or not looking for work. Half of the users have a stable employment situation with a wide variety of working job. Unemployed as interns or trainees are also represented, even if they are users who have difficulties to make time to participate in the project.
mainland (not affected by 114 emergency access), as well as a volunteer speaking French from a neighboring country, Belgium.

Geographical distribution of survey respondents in REACH112

- Communication Practices

55% of respondents speak sign language daily, while 43% use spoken French to express themselves, alternating with LSF for 20% and having preferably a feedback in writing for 21%. People able to communicate exclusively oral are only 2% and are not represented among the older participants. These prefer speaking oral with a feedback in writing.
The questionnaire asked to specify the nature of the difficulties impeding the communication by checking one or more of the following: poor eyesight, blindness, tinnitus, difficulties in hearing, reading French, gripping, speech, or cognitive difficulties. It was also possible to describe their situation in a free comment space. The overwhelming majority of deaf people speaking LSF has no reported hearing difficulties: some of them have sometimes mentioned in the free comment space they were deaf. Thus it is not possible to state with precision the number of deaf people (which is in fact the overwhelming majority of this recruitment), or to give indications of the degree of hearing loss. The questions concerned only communication practices and the nature of limitations, regardless of the identity or aspects of feeling or the difficulties encountered or not in daily life. The ten hearing people invited to participate melts into the category of people speaking orally or of people speaking sometimes in LSF and sometimes in French. Identity, professional information, or details about their life have been specified in interviews, by spontaneous comments or when requesting for assistance during the project. They are mentioned in sections were these results are analyzed.

One can note a large number of participants that have several difficulties. Most represented, apart from questions of hearings and tinnitus, relate to eyesight, reading and speaking. Many participants also reported living with a person with one or more of these problems. Taking into account these other
members of these households, the percentages increase a few people about reading, grasping, talking, and tinnitus.

Types of difficulties impeding the communication mentioned by users

- Habit remote communication, and equipment

Only a third of those who responded to the REACH112 questionnaire was a subscriber or already experienced a call via relay center. These experienced users wanted to discover how emergency calls worked. They were already equipped with either a videophone (Elision-Oplink), or a videoconference access account on their computer (PC Elision). Other users have been initiated during this project, and equipped with a free videoconference account (Elision-REACH) allowing them to make calls with Total Conversation from person to person and to emergencies. A public emergency website has also been proposed.

The majority of people involved in the project was used to remote communications by other means (SMS, email, instant messaging, video conferencing). This is also the case of the elderly. Those who live alone are somewhat less used to communicate remotely, even if they are more often equipped with a computer than other seniors. This shows the issue of participation in the project (66 elderly, including 31 living alone). Finally, we emphasize the importance of mobility expectations: 57% of
survey respondents say they need to call on a business trip. This applies to both LSF speakers and text users. Note that if users neophytes are vastly over-represented here (Elision-Reach users), which was the objective of the project, there was a similar distribution of communication practices within this population and among users already initiated (Elision on PC or videophone giving access to relay center). Users of relay center in France to this day yet massively are speakers of LSF. The first users of transcription services, currently in minority, were therefore well involved in the project REACH112. Users wishing to communicate via text or voice to text and who have never used the services of relay center could be much more represented. However, note that several of these users association representatives participated.

5.4.2. Profiles and practices of users relay center

One hundred users from Elision relay center have agreed to share their use of these services by answering a specific questionnaire designed and distributed by Websourd during the experimental phase of REACH112 emergency calls. We present their profile, compared to the previous population, less initiated to calls in Total Conversation, before analyzing their uses.

• Socio-demographic and geographical location

This concerns only deaf people, using remote interpretation services for their call. The women are also a bit more numerous than men. It is still a relatively young and active population. Ages over 50 years are less represented than in the previous population.
Sex and age of relay center users

We have also find here that a quarter of people live alone. Relay center users that responded to the questionnaire are slightly less likely to have children. Among those who have children, they are somewhat more likely to have two, and very few to have more than 3.

Marital status of relay center users

Number of children under 18 years

It is common for relay services center, paid by a single subscriber, are used by several people. It is even rare that a subscriber is the only user. Even when a deaf person lives alone, she can accommodate relatives or friends letting them make some calls.

Number of people using the videophone of another subscriber

Occupational status of this panel of relay center users also resembles the previous population. We figure out again the importance of active people and independent workers. Retirees and homemakers are here as a quarter of the workforce, even if they are less than in the elderly population above. What characterize this panel are the low representation of trainees, internship or students, and the greater presence of people with unemployment or precarious employment situation. The geographical location is dispersed even if there is a greater representation of people living in the Midi-Pyrenees, Ile-de-France and Rhône-Alpes regions.
Occupational status of relay center users

- Types of uses of relay centers

These users were asked to list and rank the kinds of contacts they call via relay center services. Among the first calls cited appear first massively public services and administrations listed by 63% of users. 15% rank first calls (interpreted) to family and friends, and 7% to the banks. Interlocutors cited by other users are then more diversified. Interviews conducted during a previous qualitative study can provide some explanatory elements.

Call via relay center listed in the first position

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Calls to utilities and governments are seen as a true liberation because they reduce travel. It turns out that for any desired information, including details of schedules or documents to give for their case, deaf people should go there and lose a lot of time. This does not, however, guarantee quality of discussions; misunderstandings persist, especially when the deaf have difficulty in written French. Many then try to delegate these administrative tasks to friends or associations, which fulfill these documents for them so they will just have to give at the end to the administration. This telephone accessibility to public services considerably transformed the lives of deaf people in reducing their travel, allowing them to quickly obtain information and finally understand a little better the French administration. It also allows them to gain autonomy.

Calls to family and friends allow keeping in touch when they live far away, but they also often allow richer relationships with these relatives. The presence of an interpreter make the discussion free and sometimes contributes to real meetings and solution finding, allowing going forward in explanations and exchange of information on people's lives. These calls, which are situations yet unusual for interpreters, because they enter the family intimacy on relatively short time, contribute for some users to a radical change of look at themselves and transform their family and social relationships.

Finally, the relay center services provide access to a set of remote services to learn about pricing, compare offers, book products, make changes and so on. These services include banks, which many deaf users wish to contact remotely. It is important to note that some decisive action mean to quickly contact the bank, like making opposition to a check or a credit card. In addition, some institutions dedicated exclusively to loans are reachable by phone.

If we now consider all calls reported by our users’ panels, regardless of their ranking, we can notice the importance of the three interlocutors most often cited first (blue). It was found that all users who report calling public services via relay centers put it in the first position. In addition, if calls to family and friends are mostly not considered the most frequent, they still concern 73% of users. Similarly we find that 52% of users say they use the relay centers to contact their bank, but they also use it to call for real estate purchases, remote buying and other calls of a commercial nature (framed in green). Among them are calls to insurance and private social security.

The most striking feature of this analysis of calls, regardless of their ranking, is the importance of medical calls: 71% of users call their doctors and hospitals via relay center services. There is obviously a significant proportion of appointments made therefore showing a greater ease and flexibility of support and care. But qualitative research mentioned above also shows that deaf people...
recall their doctor or secretariats to explain again, via interpretation, what they didn’t understand when they were in presence. Most affected are the 30-39 and 50-59 years, regardless of gender: 80% of those ages is using relay centers for these calls.

Finally, note that 26% of users use these services to contact the school for their children, 24% of business calls from home, and 20% take steps to find a job or change jobs (calls related to work, framed in black). 17% of users make also calls for actions or legal information: inheritance, divorce, and so on, which is a type of call that had been underestimated in the creation of these services.

These data thus demonstrate that the relay center services allow deaf users to reduce their moves in their administrative, medical and commercial actions, but also reduce the stress and difficulties associated with the lack of information. They find there a way to learn, to seek a greater diversity of people and stay in touch with their family and friends. They can become more organized, plan their activities, undertake more complex things. They also are ensured to better understand their partners and be more listened. They become actors and they better understand what is happening and stop being dependent in their actions. These data show that these services are not only a question of accessibility, but more fundamentally engage questions of sociability, health, autonomy, citizenship and entrepreneurship.

5.5. In conclusion, some points to remember

A variety of people who could not make conventional phone calls were able to be effectively involved in the testing of emergency calls using Total Conversation and to be particularly associated in the process of user-centred design. The profile of users shows a particular motivation associated with the presence of children, the accumulation of difficulties related to age, and the possibility to express themselves in FSL. The consent document and the document on ethics were well understood, and have been essential documents, helping to define the responsibilities of all parties.

Experimenting with simulated emergency calls to 112 proved to be a highly pertinent means to enable users to discover emergency calling and to contribute to the training of operators. However, they would have appreciated more visibility on the stages and time-slots of experiments, this information could only be given in a piecemeal manner based on the evolution of (need for adjustments and updating or not) and schedules of operators on the emergency platform (issued by the Grenoble Hospital (CHU)). The distance learning games used to discover the functionalities of Total Conversation calls interested users and has diversified their practices. However, it was also a rather daunting novelty for some. This innovative device for inviting users to appropriate communication technology requires either operating in small groups, and/or the involvement of players who are already initiated. Nevertheless, it has the benefit of promoting the emergence of a community spirit between players or mutual support. Finally, the collection little by little of user feedback and the interviews conducted at the end of the project are crucial elements in improving the socio-technical device for processing emergency calls, and can give credit to the commitment of the testers.

These experiments also created a learning opportunity for the emergency call operators allowing them to gain experience in a test situation but with real users. The operators showed interest in this process of user-centred design that allowed them to adopt a reflexive approach. However, they would have liked these tests to continue longer, involve more calls with makeup to simulate potentially distressing injuries and which would have been an opportunity for more systematic group analysis possibly with more discussion of internal procedures and guidelines.

Test P2P calls, calls via a relay centre and calls to 112 proved to be complementary (as shown in the analysis of user feedback and case studies). The emergency call system tested during this project has been validated by the overwhelming majority of users. Experiments have shown that three populations, minorities in this project, deserve more attention and support in a future phase of maturation of the REACH112 project:

• late deafened seniors, requiring assistance in the adoption of new technologies or the development of terminals resembling their traditional telephone, but with which they can receive answers in text;
• people with cognitive difficulties, for whom the interactions with emergency operators need to be adapted;

• the blind and the deaf-blind in particular, for whom all the ways of making calls need to be available in Braille (in France only the 112 public website is accessible to them).

Nevertheless, support for users, whatever their profile is a crucial issue for this type of project and should be a major focus of attention by the different project teams.
6. Appendix France: Qualitative Analysis of Trials

6.1. Study 1- Video Communication

6.2. Summary

The fundamental characteristic video telephony brings is to “see and to be seen”. This of course seems obvious but being seen changes the way emergency call centre operators have to work. Indeed, the use of video frames interactions between agents, working on the platform, differently from other telephone relay services and also between agents and callers. This leads agents into measuring what callers are seeing and believing is happening with what they can see and adapt their actions accordingly.

Video also allows various other visual interactions namely sign language or any contextual information. Certain aspects of this support relay agents greatly whereas others create interference.

This case study focusing on a sociological study of work practices concentrates on how the use of video affects cooperation and coordination between agents working on the REACH 112 platform, including their interaction with users.

6.3. Aims of Case Study

This case study tries to answer two questions:

1) How is coordination and cooperation organised on the REACH 112 platform in terms of video calls?

2) What are the outcomes and how do they affect caller-relay agent relations?

6.4. Methodology

These two questions served as stepping stones for our case study building on from part of the sociological analysis lead by the Research; Development and Evaluation department of WebSourd. To resolve it we spent many hours observing the emergency call handling platform for REACH 112 during its experimental phase. We repeated this when first opening up the service to real emergency calls. We filmed various forms of emergency calls and discussed these with agents after each call in the form of focus groups. We also collected feedback from users at the end of each trial. This case study is focused on the observations of two films made during the trials and commentary from the user taking part in video 1.

In the first sequence agents in training made certain mistakes showing us the importance that cooperation and coordination entails when handling video calls. Analysis of the second sequence demonstrates more in depths the mechanisms of sign language communication and how this shapes the agents interaction between one another and between themselves and the callers.

The first video shows a Deaf call handler (first level of call handling) signing to a caller in FSL.
(French Sign language) whilst a bilingual handler (second level of call handling) calls the local police service.

- The level 2 agent in contact with the emergency services simply translates to the level 1 agent, signing in FSL, what the police officer is saying.
- The level 1 agent will frequently interrupt the caller to look at what the level 2 agent is signing.
- The level 1 agent will look away from the caller for long periods of time to look at what his level 2 colleague is signing.
- The level 1 agent will repeat to the caller what the level 2 agent is signing as it comes along.
- The caller only sees partially what is happening as they can only see the level 1 agent repeating what the level 2 agent is signing.
- The caller must wait for a long time looking at the level 1 agent who does not look back at her.

6.5. Video 1: User feedback

Discussion with the trial participant allowed us to identify certain issues linked to cooperation and coordination between both agents on the platform. The first thing the user mentioned was the many times when the level 1 agent looked away from her to see what the level 2 agent was signing. She thought these interruptions far too frequent and felt that the level 1 agent had little or no control on the call as he was constantly interrupted by the level 2 agent. Her thoughts on this were that “they diminished the value of agent 1” and “encouraged loss of confidence”.

She also stated that she struggled somewhat with the relayed information from agent 1 because they looked disorganised; incomplete and filled with un-useful details. Instead of being reassuring the relayed information provoked more questions and therefore more anxiety. She would prefer an agent with more control over the call who could give her clear explanations about the situation.

Video 2 description

- The agent adjusts the camera in order to hide the people to his right and at the same time centres himself on the camera.
- This attempt to reframe does not hide the person filming in the background. Another person walks rapidly in the field of vision creating movement.
• The agent explains to the caller in FSL how to lie the casualty down in emergency position.

• The agent looks down to key in information and does not notice the caller who is trying to attract his attention/

• The agent notifies the caller that he will write down the information she has just given him.

• The agent writes down the information on his qualification form without informing the caller that he is going to cut the video feed to focus on his keyboard and form. The caller seems to understand that he is typing the information on his keyboard and waits for the agent to ask her another question.

• The agent types using his right hand and signs what he is writing (in this case the street name) using his left hand.

6.6. Issues and Challenges

These videos offer insight into the “see and be seen” when in a call, in this case emergency calls.

In the second video more than one person appears in the field of vision. Who are they? What are they doing? The caller can become confused by these questions if no answers are provided to clarify the situation. In this video the agent reframes the camera so that he is centred and to hide what is happening to his right. This way he can create a more confidential area for the caller. Some people however are still visible in the background and interfere with the caller and the agent’s interaction. What this video demonstrates is the necessity to think about the physical space that is needed to communicate. The agent must position himself in front of the camera but also make sure that no interference is happening in the background perturbing his dialogue with the caller. Another aspect to consider is the appearance and clothing of agents that need to remain professional in design. The agent cannot display a relaxed or slouched posture as it sometimes can be in other emergency call centres.

6.7. Integrating contextual asymmetry

Video telephony enables various support opportunities that can be shown and shared physically by the agent. These opportunities with the use of sign language assist agents in giving out precise information in particular first aid procedures. However, despite the use of video appearing to be a valuable resource for agents, in order to assist them in their work, it also creates a contextual asymmetry: callers and agents do not share common context in action and communication as the caller, compared to the agent, has limited access to information. This asymmetry is found in all emergency and general service relations. Although this asymmetry (or not knowing what is happening on the platform) help promote the legitimacy of telephone emergency services\(^2\), video on the other hand, offering only partial views on the situation, can stimulate more anxiety for the callers. Indeed, compared to other telephone relay centres, when a REACH 112 relay agent needs to solicit a colleague he cannot cut the microphone to ask a question; nor can he wave his hand; get up or move around. Interactions between agents of the two different levels are therefore visible to the caller, receiving the information. Sharing contextual information reduces this asymmetry and therefore becomes a key element in establishing a good relationship with the caller during calls.

Making an effort towards contextualising what the caller sees or paradoxically what is hidden to them allows them a more comfortable experience. Therefore agents must:

• Explain what they are doing (i.e. I am going to write this down; I’m taking a break)

• Give contextual information (i.e. The fire service is asking questions to my colleague)

• Show everything that can help the caller understand (a document; a photograph; etc)


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It is therefore necessary to think about how this information is transmitted. Analysis of video 1 demonstrates that simultaneous provision of information has more negative effects than positive. It is then evident that the level 1 agent needs to learn how to manage multiple interactions and consequently the sharing of information between agents and callers can be made in a sequential manner. At first the agent collects the information; selects them or reformulates them; then in a second stage transmits them to his colleague or to the caller. Confusion generated by interruptions demonstrates how important it is for the level 1 agent to decide when to interrupt communication with the caller. This way his professional role is clear as he/she will take on board the title of “friendly communicator” the one who wins over the trust of the caller.

6.8. Keeping visual contact: a great challenge for FSL video relayed communication

Visual communication using FSL reinforces the importance of visual contact especially when handling multiple interactions. The relationship between the caller and the agent depends entirely on this fact. Sequential management of these interferences as were described in the above section allow us to restrict the number of visual interruptions and more so to announce them to the caller. Our observations also demonstrated that agents used the chat function more prominently which allowed them to keep their eyes on the computer screen to facilitate coordination.

In the second video the agent looks down to his keyboard. Communication is therefore interrupted and the caller cannot attract his attention even when waving her hand. This small sequence demonstrates the issues related to note taking and managing the visual link at the same time. When using FSL, agents need to consider the fact it imposes a shift from the usual vocal surroundings found in relay services (written and spoken; listening and writing at the same time) to a visually stimulated one. We notice here that the agent is using various methods in maintaining this link (typing with the right hand and signing with the left) or breaking it to the caller gently (explaining that he is going to type what they just signed, shifting his body posture to show the caller that he is writing down the information). Managing the visual feed and the writing at the same time is therefore perfectly possible. It does promote more research into these communication and cooperation practices which are not suggest in this paper. We will research these in more depth at a later stage.

6.9. Related paperwork

6.10. Remember This

- It is vital to establish a communicable environment which promotes interaction. Interferences and people in the background must be kept to a minimum as they distract the caller or breach their confidentiality.
- The agent must adapt the way he interacts depending on the visibility, or lack of, of the video. This plays a great part in the way the agent takes responsibility in his role as relay agent and how he handles calls.
- To ensure the most symmetrical communication it is vital to share all contextual information, pertaining to the understanding of the situation, and to inform when communication is broken by interruptions.
- For a better cooperation and coordination between agents it is important that the responsibilities of these professionals are well defined. A clear definition of what these responsibilities are helps promote a more confident relationship between them and the callers.
- Video is transforming established cooperation and coordination on the platform as FSL at work is not just a case of adding signs and tools but also to find other utterances between the numeric qualification form; speaking and managing the communication feed.
- A sociological analysis of codes of practices led in close collaboration with the agents themselves; taking into account the callers' views contributes towards establishing suitable and professional postures.
6.11. French Case Study 2 – Emergency calling

Summary

This study on emergency text call handling demonstrates how the work of REACH 112 agent is not limited to data collection. It shows that text based interactions in emergency situations also includes processing this data, namely understanding, selecting and shaping them. In effect we can say that agents construct information. The appropriate response to the user’s request (for instance sending a rescue team or simply giving a medical advice) depends on the acknowledgment of this information. Generating this information can sometimes be an easy task but can also become problematic and delay the arrival of the rescue team.

This study on text based emergency calls analyses how the information is being constructed and points out its issues and areas of caution. It is reinforced with the comparative study on asynchronous communications such as SMS (short message sending or texting in the UK) and Real Time Text (RTT). This goes to show how real time texting helps agents to follow the sequential organisation of interaction by enhancing the use of the “question-answer” pattern, closer to speech conversations.

6.11.1. Case Study - Aims

During our research within the SCIC Websourd we spent many hours observing the different emergency services (police, fire and ambulance). We were then able to produce a detailed analysis of the interactions and coordination in emergency call centers which were written in the form of scientific papers and presented at conferences and seminars. During this research we looked closely at the way the information is constructed during telephone calls. The case study presented in this paper goes further on this process by focusing on how it is done during text interaction.

6.11.2. Methodology

This case study is based on the analysis of several emergency calls handled in Real Time Text mode. It was supplemented by an analysis of an SMS emergency communication that helped highlighting specificities of RTT. The case study not only focused on the conversational aspects of the call but also on how “the work gets done”. Indeed, this study is based on both the transcript of the calls, but also on direct observation on the platform which allowed us to ask questions to the agents and clarified ambiguities. We also benefited from the collaboration of translators who tested the solidity of our conclusions concerning specific sociolinguistic features related to deaf people. As we mentioned, the body of this research is made of transcripts of these conversations; filming made during the time of these calls, to better observe the interactions emanating from them; and our field notes in which we have recorded agent’s feedbacks. All abstracts used to demonstrate our findings and allow a better understanding have been made anonymous to protect the confidentiality of the callers.

6.11.3. Part 1 – Specificities of Emergency Text Call

One of the main issues encountered by REACH 112 agents is to successfully make the caller “say” or in this case “type” what is happening with accuracy. This is a problem encountered not only on the REACH112 platform but also in any emergency call centre. This is the case for many signing deaf callers who have limited knowledge of French rendering this task somewhat problematic. This is especially the case when operators have no or limited knowledge of Deaf sociolinguistics features necessary to understand the structure of French written by Deaf people. This complication occurs in all emergency contact centres where anyone with limited French calls or when a caller needs to use a language he/she does not master. Throughout this paper we explore the complications both from a “speaking” and from a “typing” perspective but also the consequences resulting from two people communicating with different sociolinguistic levels and points of reference in the case of text based calls.

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6.11.4. The Complications Resulting from “Saying” and “Typing”

To illustrate the complexities of these “typing” aspects let us take a look at a text call from a Deaf sing language user dealt with by a hearing level 1 operator on the REACH 112 platform. The user first gives her name; address and adds: “she sex much hurt hurt hurt” which is her description of the problem. This description does not however satisfy the agent who then responds: “problem what?”. Indeed the word “sex” is lacking in precision as it refers to a larger area of the body (lower stomach; internal or external organs) and does not match any categories on the administrative call sheets. It is therefore not linked to a regular procedure as it would be for example with heart pains which triggers an automatic dispatch. The agent must thus try and identify with more precision the nature of the problem by asking “problem what?” The caller responds with: “sex bladder much hurt worse” which adds more details but also creates more confusion as no indication if the pain is contained within the bladder or the bladder and the sex. It is also difficult for the agent to verify if the information “bladder” is accurate. The agent will therefore continue asking for clarification on the cause of pain: “period?” and to other body parts: “shock? Vaginal trauma?” This way he is guiding the caller and suggesting words that she can then reuse.

We see with this example the complexity in identifying precisely the nature of the pain for the caller more so as the pain is not visible. It is important to remember not to label this complexity as a problem only Deaf people have as we have noticed, in other medical emergency services, that hearing people experience this same level of difficulty. As both text and telephone calls to emergency services are non-visual they demand that callers explain verbally, therefore find the right words to describe their pain. As not all users have the necessary skills to translate from visual to textual information (insufficient level of written French and/or medical knowledge) therefore the retrieval of information is slowed down.

6.11.5. Differences in Sociolinguistic References

Let us take a look at the second part of the written sentence by the caller: “... much hurt hurt hurt”. We can see that the caller repeated the word “hurt” three times. Repetition in FSL (French Sign Language) is a “sign” of emphasis which she transcribes into text to underline the intensity of the pain. However the agent who is hearing and not versed in the ways of FSL does not pick up on this warning bell but evaluates the situation focusing on quantifiable elements in the sentence. “blood much? How much? Glass? Bowl?” or even “pain since when?”.

This example demonstrates how much of knowledge of FSL is paramount even when dealing with text based communication. It can help operators develop new skills in measuring the different levels of urgency. In deed in emergency call centres agents use auditory information (tone and rhythm of voice; surrounding sounds; etc) to measure; balance and complete what the caller is saying. This information do not appear in text based calls. They are then replaced by new indications such as repetition of words. A good level of FSL helps identify these indicators. It also facilitates the understanding of structure and meaning of Deaf written French allowing them to write back sentences that build on that same structure. As an example, it prevents the use of negative questions which do not exist in FSL and are often misunderstood by Deaf sign language users.

Agent: You don’t need help anymore? 
Thank you for confirming
Yes? No?

User: Yes
Agent: Please respond this is important
Do you need any help? Yes? No?

This ambiguous question bears an ambiguous answer for the agent. This creates a situation in which neither party understands each other. In light of the ambiguity the agent must reformulate his question.
6.11.6. Adjusting Referentials

Example 1

Analysis of emergency calls revealed that agents often use isolated words followed by question marks such as “pain?” and also very short sentences. When we asked the agents why, they replied that it was both to avoid the delay in typing full sentences and to adapt to deaf people’s style of writing. By cutting down on verbs and complements they believe they are making their questions easier to follow but as we describe below this technique encourages polysemy. The question “pain?” sound devoid of ambiguity but it can be understood in different ways: Period finished? Period when? Period now? The “yes” response from the caller is in itself just as vague: yes I am having my period now; yes I have had my period; etc. This simplified form of communication is only effective as long as both parties share a common communicational context (Vergely, 2008) – for example on a fire service platform. This is not the case here as callers usually have a limited knowledge of emergency service infrastructure and do not share the professional referential of the agents. Below, the question asked by the agent and the response that comes from it illustrates that what seems straightforward to agents is not necessarily the case for callers:

Agent: Doctor give Sylvia medicine?
Caller: Sylvia says yes

Whilst observing this exchange of information we overheard comments from the agent who was complaining that the response was not sufficient. Indeed by answering “yes” the caller does not take on completely her role as caller whose role is to collaborate with the agent. That is to provide adequate and detailed information on her situation. The REACH112 project makes these emergency calls accessible to callers with limited experience in calling the emergency services. It is therefore understandable that they are not yet well versed in their role as this comes with experience.

Example 2

The over use of words ending with question marks was widely criticized by the callers. This quote shows the general impression callers have regarding this type of interaction:

... They should try to build sentences when asking questions rather than simply asking “fall?” “prosthesis?” it is too “dry” otherwise. In real life when talking to someone face to face even in an emergency situation we exchange information using sentences not isolated words. It is important for the quality of the dialogue.

It would seem therefore that it is important to abide by the rules of conversation even when communicating by text. This means adapting to the users’ level of French and to write entire sentences. This also means “listening” and empathising despite the level of urgency or slowness of typing. The quote above clearly states that text based conversations can rapidly become seen as “dry” if the agent doesn’t take the time to be compassionate:

Agent: Yes
Agent: What is the problem?
Caller: My husband has fallen down the stairs
Caller: He is laying downstairs unconscious
Agent: Name; Forename and detailed address please

The follow up “He is lying downstairs unconscious” with “Name; Forename and detailed address please” is abrupt. However by immediately asking for the caller’s address the agent is indicating that he has understood the gravity of the situation. In deed sending the ambulance is conditional from obtaining this address and the aim for the agent is to retrieve this rapidly. Saying this, the caller who does not know the procedures in place within emergency services, does not see the agent, here, as taking control but as lacking in sensitivity. This example illustrates that agents and callers do not share the same perspective on the situation (Chave, 2010). Whilst the caller tries to explain his
Both examples show how agents need to understand the gap between both worlds and to try and bridge it. The first example proves that agents need to acknowledge the lack of understanding from callers of emergency services organization. This means thinking about what is implied and to clarify what they mean using suitable questions. In the second example this adjustment is met by adding compassionate words and if taking a look at emergency services call centres can be very simple ones such as “yes” and “alright”.

### 6.11.7. To be Remembered

This case study demonstrates how using text based communication can be complicated for users when explaining the pain or locating of the pain. This can be attributed to low level French or lack of technical or medical knowledge. These same difficulties are present in every emergency service.

It shows that communication is a team effort and that difficulties in communicating and understanding do not only comes from users; agents who do not share the users’ sociolinguistic knowledge are less well equipped to understand their written French or recognize the emergency degree of the situation.

This case study shows that French written by Deaf people is not reduced to missing certain words. Mastering French written by Deaf people is therefore a skill that requires an in-depth knowledge of sign language and Deaf culture in order to respects its structure and terminology.

Knowledge of specific sociolinguistics is not all that agents need, they must also be aware of the difference in perspective brought on by these and their professional role. Therefore, they need to question what they are taking for granted and to clarify innuendos. This consideration is also expressed by showing compassion through text writing.

#### Part 2 – Text Based Management Modes

**Text management in “history” mode**

The example below shows that agents often ask multiple questions in the same sentence and continue questioning before receiving answers to their initial question.

**Agent:** Name, Surname precise address please  
**User:** Adeline Lacombes  
**Agent:** Name and age of your husband?  
**User:** 16 Laval road  
**Agent:** Is he breathing?  
**User:** Paris 13  
**User:** Philip Couturier...  
**Agent:** Check if breathing if the abdomen is moving (up down)  
**User:** Philip Couturier 50 years old  
**Agent:** We are connected to the fire service  
**User:** ok  
**User:** We wait fire service then

The user finds herself bombarded with more questions before being able to give out her answer to the first question. During this exchange she never gets to answer to the question “is he breathing?” because the agent does not give her enough time. Therefore instead of approaching text based communications like a telephone conversation base on the “question-answer” model, agents use what we have called “history” mode. History mode implies that the text is always visible to the caller and that they can always refer back to it if necessary. However we have noticed that when questions are continuous, users often do not answer all the questions which forces agents to reiterate. Agents confirmed this observation and said: “People only remember the previous question. If we send a large number of questions they will only answer the last one”.

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Also tracing mode implies that agents will drop certain words throughout the call when reiterating a question that has been placed in a certain context. In the example below, circled in red we see that the agent is asking the same question but takes out the word “fallen”. This omission confuses the user who does not understand it. The agent is then obliged to reformulate which in an emergency situation means that the agent will be wasting valuable time.

Agent: *Bleeding?* *Fallen what height?*
User: *No but maybe fractured*
User: *Unconscious*
User: *Right I need to get back*

Agent: *We are connected to the fire service*
User: *Ok*
User: *We wait for fire service then*
Agent: *Wait there in case the fire service have a question for you*
User: *Yes*
Agent: *What height?*
User: *What?*
Agent: *What height did he fall from?*
User: 2nd floor
Agent: *down the stairs right?*
User: *about fifteen steps*

This abstract shows that trace mode text calls (even when using RTT displaying the conversation history in a window visible to the caller) is not appropriate for text calls and it is preferable to think of text based conversation on the “question – answer” model. RTT favours this type of interaction as the communication is synchronous. SMS’ are slow as there is a wait between each sending of the questions and almost encourages using trace mode in order to save time.

RTT a tool to construct accurate and precise information

RTT enhances the production of a more accurate and precise information as it reduces the risk of misinterpretation caused by incorrect associations of the caller’s answer with the agent’s question. It is by analyzing an emergency call via SMS that we witnessed how the association of questions and answers could lead to serious mistakes which once transmitted to local emergency services could affect their decision on whether or not sending a crew at the caller’s home.

As we have mentioned already to save time SMS calls are treated in history mode however we noticed that agents would fall back into the “question-answer” mode to clarify what the caller responded with the order of the questions therefore framing the interpretation of answers. The example below shows how the agent uses the question-answer mode to interpret the information given to him by the caller and how this association drives the information that he then gives to the emergencies: “it hurts her a lot when she urinates”.

Agent: *Blood? Hurt when pee? Other pains?*
User: *Blood red yes and pee a little*

The agent associates the questions and the answer in this manner:

*Blood* > *Blood red*

*Hurt when pee* > *Yes pee a little*

*Other pains* > *None*

The agent matches the answers with the questions as if the user followed the order in which the questions were asked. In fact throughout the entire SMS exchange the user did not always respect this convention. She does not answer every question; interrupts by adding more information on the severity of her pain or does not answer straight away to the question asked. The association of questions and answers then appear to be more random during a SMS call which challenges this association of questions and answers made by the agent.
According to agents “real time texting makes all the difference! It gives us the possibility to verify and check the information”. In deed RTT coupled with the question-answer mode allows agents to make sure that the association of questions and answers is accurate; it also helps them to assume their professional role as agent since it is easier to frame the dialogue; to repeat the questions or to reformulate them. An analysis of the practices of interaction in emergencies using RTT is on-going and will be made public at a later date.

6.11.8. To be Remembered

Agents assume that callers will refer to the conversation history and that they answer the question in a chronological order.

The analysis of these text interactions shows that users do not respond to all the questions and that the order the answers come in is sometimes random.

Managing calls in history mode leads agents to leave out certain information throughout the call.

The text must be undertaken like a telephone conversation built on the “question-answer” model. Turn taking must be respected and agents must ask one question at the time and wait for the answer before asking the next. This clarifies the interaction, the role and places of each participant, and avoids making inaccurate associations.
7. Appendix – Focus Groups

The focus groups are set out country by country. In each case, a form was supplied in order to summarise the content of the focus group. However, this was not always used. The data is then presented in different formats.

7.1. Sweden Focus Group Reports

Participants in the focus group end users
Date of the focus group 2012-04-03 Duration of the focus group 1 hour
Number of participants 5

Main themes and issues which have arisen from the discussion:

- The end users are worried about the REACH112 emergency service for Total Conversation users. The service cannot terminate.
- Total Conversation and being able to communicate in the mother tongue are cherished by all participants. The feeling to be independent to make calls to the voice world (authorities, care, social service e.t.c.) by using VRS.
- It is frustrating with bad network connection and/or poor 3G coverage and disturbed/broken calls. Especially when waiting in queue for half an hour at some instance and then losing connection with VRS, it drives people crazy.
- Asking for 24/7 VRS and that the TC technology is up to date with other technologies in the market.
- There is a need for language relay service and/or more flexible VRS operators for people with poor language/sign language (for example immigrants).

Actions taken or recommendations to be made
(i) for REACH112 development
More interoperable devices (Android app eCmobile for even more types of smartphones for more choices and diversity).
(ii) for the community of users and development of services
Society must take responsibility of making it possible for everyone to call 112. The service cannot stop once it has been served to the people.
Lobbying and work for other types of services for deaf immigrants/deaf-blind etc that have problem to use the generic VRS.

Date of the report: April 4th 2012

Pilot Location: Sweden
Participants in the focus group relay agents
Date of the focus group 2012-04-03 Duration of the focus group 1 hour
Number of participants 6

Main themes and issues which have arisen from the discussion:

A lot of discussions about the working environment for the relay service operator at home (The relay service operators take the calls at home in non business hours) Important with background, lighting, …. Should the operator sleep or be awake?

Actions taken or recommendations to be made
(i) for REACH112 development
The audio between the relay service and 112 call-taker should be connected automatically. (At the moment the relay service needs to make a manual call to the 112 call-taker)
(ii) for the community of users and development of services
Society must take responsibility of making it possible for everyone to call 112.

Pilot Location: Örebro, Sweden

**Participants in the focus group emergency service staff**

**Date of the focus group:** Feb 7, 2012 **Duration of the focus group:** 60 mins
**Number of participants:** 10.

**Main themes and issues which have arisen from the discussion:**
- REACH112 emergency number is a valuable service
- Few calls so far, needs more testing/practice calls
- Valuable with three-party-call involving video and relay
- Needs integration with Zenit (SOS Alarm’s case handling system)
- Text calls may need interpretation/relay

**Actions taken or recommendations to be made**

(i) **for REACH112 development**
- More information in the calls (geolocation, address)
- Call handling across countries (all over the world)

(ii) **for the community of users and development of services**
- 2nd stage PSAP should have TC
eCmobile is a great tool. TC in mobile phone, easy to carry and use anywhere

**Date of the report:** Feb 28, 2012

### 7.2. UK Focus Group Reports

**Location:** Bristol, UK – March 2012
**Participants:** end users - 7 Deaf sign language users participated

**Main themes emerging**
- Almost all found out about the REACH112 project and the implementation, from personal contacts.
- Strong request that only mainstream hardware should be used and this should include Apple products (which it did not at that time; but did later)
- At the same time, a mobile version was needed (it did exist but the user seemed unaware) in order that people could be contacted at any time.
- Relay services have to be 24 hours – this was confirmed also in the context of mental health needs.

**Recommendations**
- Service must continue – the group is not happy that this is a pilot only.
- Replace the text relay service with Total Conversation.

### 7.3. UK Focus Group Reports – 2

**Location:** Bristol March 2012
**Participants:** Eleven Relay agents

**Main Themes emerging**
Deaf callers need more training in how to manage a call – as they often seem unprepared or are confused about the relation between the relay agent and the hearing person who is in the call. This applies especially to older Deaf people.

Hearing people also need to have some form of standard information on how the service works.

Various issues concerning pay – and the format of payment – rates in UK vary and from one person to another; agency fees are higher. Out of hours working (after 6pm is expected to be paid at a higher rate).

Practical issues such as how provide a “holding screen” when the hearing part of the call was not being answered or was on hold, so that the Deaf person and the interpreter were not just staring at one another.

For many home working was not an option.

Interpreters need more training and then more feedback on performance.

**Recommendations**

Better arrangements for payment

Closer working with the national interpreter professional association

More training and support for all people involved.

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**7.4. UK Focus Groups 3**

Location near Bristol; June 2012

Emergency Service Call takers: 6 fire service and 3 police staff

**Main themes emerging**

Very small minority of people but then if the system saves a life, it might be worth it.

Surprised to discover that Deaf people do not read or write

Issues concerning trauma which might occur if the emergency was seen onscreen. Seeing the incident could also introduce a new layer of decision-making as the call taker might need to make judgements about the options for despatch etc.

Difficulties if there was a delay in obtaining an interpreter which meant that the call taker was staring at the Deaf person. The expectation is that the interpreter should pick up in same time as the emergency service call taker – ie 10 seconds.

The call takers felt that direct calls from the hard of hearing person were stressful – the HoH person does not use sign language but has difficulty in understanding through lip-reading. If the text functionality is not working well either, the call becomes severely problematic. Where this occurs with a non-English speaker (ie not Deaf) then the service would have two call takers monitoring and would fall back on the caller line identification to obtain the geographical location of the caller.

From a police perspective, the need for video is not pressing. It is probably more important to ambulance services where the state of the person is of importance. Like the fire service, the police priority is an understanding of the problem and then the location. In relation to non-emergency calls, there would be a very strong application.

The software was very easy to use and call takers with limited preparation were able to take and deal with calls satisfactorily. However, the interpreter must be available.

**Recommendations**

Improvements in the broadband connection and guarantees on the availability of the relay agent

More training with hard of hearing and text response.
7.5. France – Focus Groups in user-centred design process

The arrangement for focus groups in France was different in that it was embedded in trials and simulations rather than in response to a running service. Nevertheless, the comments and the analysis are helpful in understanding the views of call takers. The relevant section on focus group response is at the end of this section.

Abstract: the focus groups organized in France are part of the experimental protocol of the REACH112 French pilot. This document details this protocol and the results obtained through simulations, experiments and focus groups involving end-users and emergency professionals.

7.5.1. Introduction

The REACH112 socio-technical solution was developed and validated through a two step process which focused on user-centered design. Three users groups were involved in this process: end-users, emergency professionals, and REACH112 agents. Interpreters also participated occasionally to simulations and experiments as experts.

The objective of these user tests was to create a bottom-up synergy revealing through focus groups the specific needs of different type of end-users (deaf, hard of hearing, deaf blind) and to obtain their views on the communication solutions proposed by REACH112 French pilot. This synergy was also set up with emergency professionals (SAMU Centre 15, Firefighters, and Police) and REACH112 agents.

The experimental protocol is split in 3 phases: first a simulation phase, second an experimentation phase in artificial conditions and finally an experimentation phase in real conditions. Feedback has been systematically collected during simulation and experimentation and a group discussion took place at the end of each day. These days of test, as well as the focus groups, have been filmed. Since phase 2, it has been possible to dissociate the three users groups (end-users, emergency professionals and REACH112 agents) and collect the various feedbacks separately. Thus, all the users groups have been able not only to test and speak about communication means developed by the French pilot, but also to contribute to improve them. These results and improvements have been continuously integrated in project deliverables and in internal documents of functional specifications, which have guided the design and set-up of graphic interfaces for agents and end-users. It has also permitted an accurate analysis of uses and communication which contributed to give a solid theoretical base to our dissemination documents and training of end-users and REACH112 agents.

This document details the three phases of the experimental protocol and, in a synthetic matter, its results. It is complemented by two case studies analyzing more precisely some of the results stated below.

7.5.2. Phase 1 – Simulations

We started our work by three simulations reproducing artificially emergency call process: the equipment used was not the real one, people were playing roles, and calling conditions were not real (eg, users and emergency services were sitting in the same room). Focus groups during which users commented on their experience, their needs, the problems they encountered, the benefits of proposed solution and suggestions for improvement, ended simulations n° 2 and n° 3.

Simulation 1 – mediated remote communication with users: which issues?

Location: 1 site
The first simulation, called "paper simulation" took place November 13, 2009. Using cardboard interfaces, this simulation has allowed the REACH112 French team to identify the issues and challenges related to mediated remote communication with users in case of emergency calls.

Simulation 2 – Test and focus group with signing deaf end-users

Location: 1 site

Signaling deaf users have been invited to participate to the second simulation day on February 25th, 2010. Sign Language interpreters from ADIS Savoie and Interpretis companies also intervened as experts. Emergency LSF and text communications were tested using laptops equipped with webcam and Real Time Text (RTT) software. Two configurations of calls via relay centers were also tested:

User to l.e. services via relay centre

User to REACH112 Agent direct communication + REACH112 Agent to l.e. services via relay center

Simulation 3 – Test and focus group with hard of hearing and deafened end-users

Location: 1 site

The third and final simulation day took place on May 3, 2010. Its objective was to test the REACH112 emergency Website, video and text communications on PC and text communication on a mobile phone. Hard of hearing and deafened users tried 2 types of communication: voice + text and text + text. They were asked about the ergonomics of the interface, communication’s quality and various difficulties they encountered during this day.

7.5.3. **Phase 2 – Experimentations with end-users**

The aim of the experimentation phase was to reproduce as close to reality situations of emergency calls using ad hoc material and following the exact path of the call process. Users were calling the REACH112 platform in Grenoble from Toulouse; the calls were handled by REACH112 agents and transferred to real emergencies professionals. Like simulations, the experimentations were followed by two distinct focus groups with end-users and REACH112 agents on every remote site; those experimentations and focus groups have contributed to improve the solution developed by French pilot.

Experimentation 1 – test and focus group with signing deaf and emergencies professionals

Location: 2 remote sites

| Toulouse | Grenoble |

The first experiment took place on September 1, 2010. Signing deaf users proceeded LSF emergency calls from Toulouse. These calls were handled by a signing deaf person on the REACH112 platform in Grenoble. The information gathered from these calls was then relayed to local emergency services by a bilingual French-LSF agent on the phone.
Two members of Toulouse medical emergency services (SAMU Centre 15) participated in this experiment and to the focus group. Through this experiment, signing deaf users and emergency professional’s needs, practices, habits and difficulties have been clarified.

Experimentation 2 – test and focus group with deafened end-users and emergency professionals

Location: 2 remote sites
Toulouse Grenoble

The objective of the second day of experimentation that took place January 27, 2011 was to test emergency calls in text and voice + text modes. In Toulouse, two deafened end-users called the REACH112 platform in Grenoble with a RTT mobile. An agent of Toulouse’s SAMU Centre 15 handled those calls.

Experimentation 3 – test and focus group with signing deaf, deafened and signing deaf with troubled vision. REACH112 agents and emergency professionals participated in the experimentation

Location: 3 remote sites
Toulouse Grenoble Toulouse emergency services

The entire call process has been tested by different type of users during the third day of experimentation on 5 May 2011.

From Toulouse, users contacted the REACH112 platform in Grenoble using different technologies: computer, TTR mobile phone, videophone, etc. Calls were handled by REACH112 agents who gave all information, directly by phone or by video via a relay center, to Firefighters and medical emergency services of Toulouse.

7.5.4. Phase 3 – Experimentation in real context

The last experimentations took place in a context of relative proficiency in the call process. Close to real communication situations, they involved end-users on their work area in Toulouse, REACH112 agents from their call center in Grenoble and local emergencies from their work station.

Observations and focus groups with agents have been realized from REACH112 platform. The appreciations and opinion of end-users have been collected by text or video email.

Experimentation 4 – Test of work-sharing and coordination among agents during text, voice-text and FSL calls.

The experimentation that took place on the 5th of July, 2011 focused on work-sharing between Level 1 signing deaf agents and Level 2 bilingual agents. It permitted to observe the effect of this organization on interactions with end-users. Various desks lay-outs have been tested as well. End-users used videophone or webcam combined with different communication modes to call the platform.

Experimentation 5 – Testing coordination during SL calls.

The experimentation on the 9th of August, 2011 permitted to test various configurations for coordinating work on the platform when handling calls, especially in situations of medical advice.
signing deaf agent speaking with a doctor via the Level 2 bilingual agent becoming interpreter; via Level 2 bilingual agent taking notes and relaying information; via relay center.

Overflow situations have also been tested, compelling Level 1 signing deaf agent to call himself local emergency services through a relay center.

Experimentation 6 – Testing coordination during text calls.

The experimentation on the 11th of August, 2011 focused on text calls processing.

The objective of this experimentation was to analyze more precisely the interactions between agents and end-users in text mode.

Various configurations of management of medical advice situations were tested. RISP System services and an emergency doctor in Grenoble have been solicited to test situations of medical advice by velotype. Emergency calls in overflow situation have also been tested.

7.6. Phase 3 and additional focus groups

As we indicated, the opinions and feelings of the REACH112 agents have been gathered repeatedly during targeted simulations and experimentations days. Experimental calls were recorded. During the experimental phase of real emergency calls, a tracking call handling form has been proposed to keep track of these exchanges. Days of observations for which agents were not made aware of in advance, were also held on the platform. These data were supplemented by focus groups and collection of individual feedbacks from users. We also consulted a few call records. Based on all these elements, a first analysis of communication practices and work coordination on the platform has been proposed.

On March 23rd, 2012 a focus group with REACH112 agents was organized by Websourd at the Grenoble University Hospital. Its objective was to initiate a reflexive process allowing agents to comment and analyze their use of technical tools and their communication, cooperation and coordination practices. To this end, we presented our first analysis and completed it with video sequences of call processing in order to begin the debate. Through that self-confrontation process we were able to test the relevance of our analysis and to collect the comments, reflections and solutions proposed by the agents.

USERS TESTS RESULTS

Presentation

This section summarizes the results of the different phases of the experimental protocol and focus groups. It also recalls the vigilance points identified during this process. The publication of scientific papers and a thesis (in preparation) brings a more comprehensive view of these results. Two case studies also complement the results presented below.

Improving quality of user-agent relation

Staying permanently in touch with users: it is important to maintain the visual, vocal and/or textual link with users.
In case the agent has to cut the communication link (per example, to type the information given by the caller), he must announce it to the user and give him minimal information about the reason why he is doing it: “I will write down the information”.

Collecting tools on the same screen: the electronic patient record and the communication window are collected on the same computer screen to avoid bust movements and to facilitate visual glance on patient record. In that configuration, the agent can rapidly control the position of his cursor, go back to his conversation with the caller and give a glance back to the record to check what he wrote.

Agents must provide users with contextual information to help them understand what they partly perceive through video. It is also sometimes necessary to explain what is off screen.

To ensure that information is well understood by users, agents must format it to fit the caller. They are therefore acting as mediator.

To ensure that information is well understood by users, agents must adapt it to fit the caller. Therefore, they act like mediator.

Agents have to adapt their written French in order to suits the caller style: it has to be simplified when required or elaborate if the caller has a good knowledge of the written French.

Signing deaf users feel more confident when their call is handled by a signing deaf agent.
A good knowledge of LSF and of deaf culture helps in interpreting information given by the callers, more specifically in case of complex communication situations (low internet speed, overwhelming emotions, etc.). It is also an advantage during lip reading conversation, and a great help for understanding and handling French written by the deaf.

Vigilance points:

Controlling what is shown by the user with a 3G phone: with a 3G phone, user naturally shows what it is happening. Thus, he breaks the communication link, making difficult for agent to regain control of the conversation as he is no longer watching him. The agent must be as much as possible the one that manages these cuts by telling the user what to show and when to show it.

Text communication has to be thought like a telephonic conservation. Like the emergency professionals working a call, REACH112 agents have to concentrate on the question-answer patter, learn to interrupt or refocus the caller when needed, find ways to confirm the information and, if necessary, repeat or rephrase his question in order to get the answer he needs.

It is important to add signs of compassion even in text communication.

Unlike video communication, text communication does not give a direct picture of the emergency situation. Therefore, it is more difficult for agents to evaluate the degree of emergency. In that particular context, it is important to create specific emergency indicators for text communication.

With video communication, agents are passing from backstage to frontstage. They have to adjust their professional posture to that new visibility.

Agents have to take that visibility into account when coordinating action and sharing information with their colleagues on the platform.

Improving dialogue and shortening the length of call treatment

Improving agents computer interface:

Extracting the contents written by the end-user through a cut and paste function;

Access to pre-written sentences that can be sent automatically;

Showing up, letter by letter, the pre-written sentences in order to give the impression that it is the agent who types them on the keyboard;

Adapting the interface according to communication mode: when the caller choses to communicate in Sign Language, the text window is small and the video window is large; when the caller communicates by text, it is the opposite configuration that appears on his screen and on the screen of the REACH112 agent.

Using text as a validation support even during video communication.
Promote video use, even during text-based interactions.

End-users calling the REACH112 platform via relay center

To process emergency calls, interpreters must receive specific training including professional terminology, emergency procedures, stress and commitment management, etc. They must be able to understand regionalism and a clumsy, fast or troubled by stress or injury, expression. Maintaining these skills requires frequent interpretation in emergency situations.

Interpreters must be available at all time in priority mode.

Agent must see both the caller and the interpreter: if he only sees the interpreter, there is a risk of losing essential contextual information.

This last point is crucial. When the interpreter is the only one to see the user, and he rises in skill over the calls, he can be urged by the emergency context to go beyond his professional scope. Therefore, there is a risk of interference between REACH112 agent and interpreters professional roles.

Vigilance points:

• The required competencies are beyond the scope of interpreter’s profession. However, they are competencies of signing deaf operator.

• Engaging an interpreter or a transcriber, even in a 3-point communication, adds latency. Calling directly a deaf agent enhances speed and quality of communication.

• The blurring of professional roles is an important risk to consider. It raises liability issues and it is not desired by interpreters or emergency services.

These three vigilance points validated the choice of not using relay service for communication between end-user and REACH112 emergency services.

Signing deaf agent allows signing deaf users to call directly the REACH112 platform.

Level 1 agent calling emergency services via relay center

This solution is intended only as occasional use. It guarantees the autonomy of signing deaf agents working as Level 1 operator. In that manner, they can reach emergency services by themselves in two types of situations: agent Level 2 are overflow with calls and / or calls regarding general information (question about the address of the nearest drugstore for example).

Vigilance points:

Because the agent manages two communications at the same time, visual and textual links with the user are momentarily cut. According to the situation, this can be experienced as a communication break off and quickly becomes nerve racking for end-users. For that reason, it is important that agents announce and explain cuts before they happen.
With video communication users have an insight into what’s going-on on at the call-centre but, at the same time, part of the action remains unseen. Therefore, the caller partially sees the communication between the agent and the local emergency services. This device requires:

- to put the caller on hold in order to hide the communication with the emergency service; this can be a source of anxiety for the user and presents the risk to loses the visual contact. Once the contact is lost, it is difficult for the agent to draw the caller’s attention.

- to keep contact with the user and consider its presence when sharing the information with local emergency services.

These vigilance points are related to the management by the same agent of two communications: with a user and with local emergencies. The same issues would be raised by a Level 1 hearing agent managing two interactions at the same time. These points confirm the importance of coordinating work between Level 1, managing the interaction with the user, and the Level 2 managing the interaction with local emergencies. The articulation of SL and video communication however enhance the impacts of that coordination on end-user.

Between two emergency professionals, the interpreter no longer has to deal with stress management and blurring of professional roles issues. However, the availability and competency questions remain valid.

Connecting end-users with emergency services via relay center

Depending on the situation, the local emergencies may decide that the user only needs medical advice. In this case, rather than engaging in a three-way relationship and mobilize an unnecessarily a REACH112 agent, local emergencies can contact the user via relay center (interpreter or transcriber).

The Level 1 agent play an important role in the choice of this solution: he is the only one that can determine whether the user is able to be understood by an interpreter and to understand and follow the advice of the doctor.

This solution is not selected in the case of shocked or injured users, thus the interpreter are in a situation of relatively ordinary interpretation. Moreover, doctors have to adapt their speech to the user; interpreters then do not need to master professional terminology.

Vigilance points:

Doctors have to learn to manage this type of interactions. They are not used to wait a few seconds for the answer of the user (time of the interpretation or transcription) and are tempted to interpret these breaks as part of the interaction.

That solution assumes that incoming calls are possible on end-users communication device.

Calls from people threatening to kill themselves are special case that requires a specific relay, for example to a permanent line with deaf and hearing psychologists.
Task and role distribution on the REACH112 platform

The agent that handles the call is also the one writing down the information and qualifying the call.

Level 1 operators – deaf and hearing – have the same role and responsibilities: they are responsible for the call they handle.

Level 2 operators relay the information from all operators – deaf and hearing – to emergency services.

Adjusting spatial organization: agents Level 1 and Level 2 are facing each other in order to facilitate visual communication.

The Level 2 bilingual agent is not an interpreter: he does not simultaneously translate questions or information from emergency services. On the contrary, he first listens to what emergency services say, formats this information or these questions and then relays it to the Level 1 agent when he is available.

Level 2 agents may use interpreter’s memorization and note taking techniques.

Level 1 agents decide when they can break off the communication with the caller to interact with Level 2 agent.

Tchat communication helps Level 1 agents to manage these multiple interactions situation: they can request information or respond to Level 2 agent at the appropriate moment.

Ergonomic improvements: taking into account user’s specific needs

Showing the call status (dialing, on hold, etc.).
REACH112 calling website: simplified interface design, use of pictograms, calling 112 by a single click on REACH112 call button, possibility to prefill an identity form and to choose and register its favorite communication mode.
8. Appendix Case Studies

These appendices are presented as supplied with only small changes to formatting. The intention was to use a fixed simple format but partners chose to try to more accurately reflect the richness of the data.

The content should be easily readable and there is clearly a good deal more analysis which can be carried out to extract the themes.

Much of the superficial thrust of the cases is similar to the quotes and responses in the other chapters of the report. What is particularly interesting are the underlying process issues which are hinted at or have been dealt with in order to manage the incident.

Extent of training and levels of support is an overarching theme as is the awareness raising for all those service professionals. At present the awareness comes as a flash of insight only when in a call but it is important that this development is anticipated and resources are available prior to taking calls.

Discussion based on the content here is to be found in Chapter 11.

8.1. UK REACH112 case study 1

<table>
<thead>
<tr>
<th>Title of case study</th>
<th>A case study of a Deaf lady in her early 40s who is a regular user of myFriend.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your name</td>
<td>Field Worker A</td>
</tr>
</tbody>
</table>

**Activity details**

**The case in a nutshell**

I interviewed a deaf lady in her early 40s, divorced Mum with two children but recently remarried and has a young hearing toddler. She has been through a lot in her past life and has always been passionate in improving the quality of lives in the Deaf world. She was immediately immersed with the myFriend facility when it was introduced to her and has been vivid user since October 2011. She has been very useful in giving feedback on improving some of the service and I have worked closely with her.

**The context – the agency, individual and life prior to the intervention of REACH112**

Before she was introduced to using myFriend, she relied on attending the Deaf Association for making calls. She had always felt frustrated because of the confidentiality issues. Some of the staff are her friends and she had never felt comfortable in approaching them to make calls for her. She lives in the City and does occasional volunteer work with the Deaf Association as well as with some Deaf Family groups. She is a BSL user and prefers to sign rather than using English. Since using myFriend, it had changed her life completely because she can simply make video calls at home or with her new Samsung galaxy S2 phone.

**What you wanted to achieve**

I wanted her to feel independent in making video calls and not to have to drop into the Deaf Association to make calls.
Firstly, she found out about the myFriend workshop, through a poster at the Deaf Association as well some of her Deaf friends had told her.

She joined in October 2011 after when two fieldworkers from myFriend team delivered a workshop at the DA where they demonstrated how myFriend facility works. Soon after that, I visited her in her home and explained how the system worked. Few months later, she was loaned a netbook because her PC does not have the capacity to use myFriend system. She does not have a telephone line at home, only broadband. I visited her on four separate occasions – on average once or twice a month and that has been valuable for her. As many other clients had too, we practised how to use myFriend facility, and introduced how to use the correct buttons. She also came into Support Centre at the DA when I was present on Tuesday mornings, on a fortnightly basis. She has since bought a new Samsung galaxy S2 phone and I have been teaching her how to use myFriend facility on it because it is a little different from the PC.

**How do you feel between Text Relay and myFriend?**

**Text Relay:**
- My English is not main language
- I cannot see the facial expressions of the person
- I cannot express what I want to say in written English.

**myFriend:**
- All in BSL
- I can use text if I want to – like for example, recently I had to type my NI number. That was useful to type.
- It has good facilities
- I feel free and independent
- I do not have to drive to my GP, just to make an appointment. I can call now to make an appointment.
- It makes my life so much easier
- This service is so valuable

**This was her exact comments:**
- I was immediately very nervous. I did not understand how the background of the system worked – for instance, what was it like, I didn’t know what to expect. In fact, I did struggle and I lost my confidence a little bit, but I never gave up. My first call was to my hearing Mum which was amazing. I started using this relay service in late October and I must say that I am one of the most regular user in my area. When I used my netbook for the first time, I was so happy but found the screen was a bit too small at first, but I got used to it.
- It is brilliant. I definitely feel more independent.
- I felt lost before. Now I don’t anymore.
- I can understand the conversation better as I can see the person’s facial expressions including the interpreter at relay service.
- I feel free – I can make urgent calls between 10 am and 6pm if I needed to.
- I needed time to learn, and I am now a confident user. Other people will be the same.
### Problems and/or issues

This was her comments:-

- I had some hiccups when I started using myFriend, especially with my PC, which is why I eventually was loaned with a netbook from a fieldworker via Centre of Deaf Studies. With the first calls, it was not easy. I was terribly frustrated with all these technology problems and I needed someone to be with me to help me. The user guide did help me, but I found having a fieldworker really useful. Whenever I need clarifications, or some support, my fieldworker was always there for me.

- Secondly, I do not like leaving or receiving video messages because I do not recognise the person’s telephone number. There are no names attached to it, especially when you receive notifications by email. This needs to be changed.

- Thirdly, I wish there was a 24 hours service for the interpreter relay service, or make the time slot a little bit longer, say from 8am rather than from 10am. There were times where I needed to call my children’s schools before the 8.40am start but I couldn’t.

- Lastly, there is not enough awareness re other professional organisations using this new system, like Government offices. Organisations themselves recognise the Text Relay service and I hope they will be the same with myFriend. I am not too sure about the name ‘myFriend’ though.

### What the person(s) in the case thought about it

She mainly uses it to call her hearing Mum and some family members, as well as calling her GP. Recently, she has been gaining confident in calling other people, for example, her dog’s vet and the building roof contractor when her roof needs replacing/improving. She recently called Child Benefit Agency through tax credit department but unfortunately, they refused to accept the calls through myFriend. She has complained to them twice – once with her letter which I helped and the other letter which the senior staff at the DA helped with.

I asked her if myFriend has benefitted her. This is her exact reply :-

“Definitely. My life has changed big time. I now can call my Mum through the relay service – I do not have to text her anymore. I am still hoping that my Deaf friends from Devon, Plymouth and Reading will use this service very soon. I feel free and much better. I do not have to rely on using DA to make the calls which were very frustrating because of staff shortage sometimes as well as confidentiality issues. I was embarrassed at times. I can simply make calls with hearing people, all by myself now!”

### Key messages for REACH112

She really values this service – she says that it is valuable for her. She also commented this “Please, please don’t think of closing it down if this happens. I will be at loss and I will have my low confidence returned. I will be very frustrated”. This says it all!

### Personal details

<table>
<thead>
<tr>
<th>Your Role</th>
<th>Field Worker</th>
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<tr>
<td>Organisation/REACH112 Partner</td>
<td>Centre for Deaf Studies – Bristol University</td>
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## 8.2. UK REACH112 case study 2

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<th>Title of case study</th>
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<td>Your name</td>
<td>Field Worker B</td>
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### Activity details

<table>
<thead>
<tr>
<th>The case in a nutshell</th>
<th>A Deaf person who is unable to access information in written English, they rely on support from support workers and family. Their inability to use English provides a huge barrier to accessing everyday life, which in turn has impacted upon their general well being and mental health. They are a mental health team service user, and they are in full time employment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The context –</td>
<td>Before I was introduced to myFriend by the mental health team I had to ask my family to make phone calls for me. If my family were unable to call on behalf, for example if I needed to sort something out with the bank or my GP, I would have to go in person with a support worker to visit them. This meant that simple tasks became very time consuming and I could only deal with these matters when my support worker was available.</td>
</tr>
<tr>
<td>What you wanted to achieve</td>
<td>I wanted to be able to contact hearing people without any barriers.</td>
</tr>
</tbody>
</table>

### A short description of what you did

| The Reach112 team provided me with a specially adapted netbook so that I would be able to make calls at my convenience. At first I was given a simplified guide, explaining how to use the myFriend software with pictures and simple English. However, I still did not really understand how to use it so my support worker helped me every week and I got there in the end! My support worker went to workshops and training provided by the Reach112 team and they were able to use this information to support me. |

### What worked well

- I now have more friends and keep in touch with people more easily so my social life has improved.
- myFriend is very valuable to me, it helps my confidence.
- Using myFriend I can contact hearing people using my preferred method of communication, BSL.

### Problems and/or issues

- I would like to have access to a 24/7 interpreting service.
- There is not currently access to the emergency services through myFriend, this concerns me, I know that this will be possible but I do not know when and it is a priority for me.

### What the person(s) in the case thought about it

- I feel pleased that I was informed about this project and I feel that the positive effects of using the myFriend software have been really significant, it has been a real breakthrough for me with my health problems.
- I now feel that I have full access to services, particularly the mental health team, and I no longer have to rely on others.
- I previously found trying to communicate using English very stressful and I was always unable to express myself. I now feel much more confident being able to communicate using BSL.
- I have made new friends through myfriend

### Key messages for REACH112

| Without my friend I would be frustrated and I would revert back to how I was before, when my mental health problems were worse. |
### Activity details

**The case in a nutshell**

I interviewed a Deaf male BSL user in his early sixties, retired Professional Photographer. MyFriend facility was introduced to him in October 2011 and he has been a faithful user with this system. He has further told his friends about this service but he has found the interpreter relay service most useful of all. He feels he can easily make video calls in his home comfort or with his new galaxy S2 phone when he is out and about.

**The context** – the agency, individual and life prior to the intervention of REACH112

Before he was introduced to using myFriend, he relied on using TextRelay but he was always frustrated because English is not his preferred language. He had a minicom but he rarely uses it. He lives in a rural area and he is isolated at times. He used to also rely on receiving help from Gloucestershire Deaf Association to make calls as well as asking his Deaf girlfriend who has better access to the use of English. Overall, he was not independent in making contact with the outside world. Now, since the introduction of myFriend facility to him last October 2011, it has changed his life because he has the luxury options to make video calls from his home and on his mobile phone when he is not at home.

**What you wanted to achieve**

I wanted him to be more confident, and to become independent, in making his own calls – both to Deaf and hearing, without relying on anyone else.

**A short description of what you did** – the REACH112 activity (training, support, provision of equipment)

Firstly, he found out about myFriend through a poster displayed at the Deaf Association and also via recommendation by some of his Deaf friends. He joined in September 2011 after two fieldworkers from the myFriend team delivered a workshop at the Deaf Association where they demonstrated how myFriend works. Immediately after that, I visited him at his house and installed the software on his PC and explained how it all works. I made 3 visits and they all have been very worthwhile to him. There were a lot of explanation involved with making calls – how to press the right buttons, how to install regular phone numbers in one file, how to use interpreter relay service. After a few months, he bought a Samsung Galaxy S2 phone after he has seen how much benefit it has given to me. He now uses Samsung galaxy S2 more often than with his PC.

**What worked well**

His positive features are as follows:

- He can use BSL when contacting hearing people
- The communication is very clear
- He can change appointment dates without any hassle
- He feels more independent without bothering or relying on anyone else to help
Problems and/or issues

He brought up some negative issues as follows:

- There were some problems with using myFriend due to the broadband connection. These have now been resolved.
- There have been some software problems, for example, text number being missing, fonts have changed, the screen won’t close after using it several times – all small problems and this has always been reported me who he said has been very helpful and has sorted out most of the small problems.
- He got confused with the interpreter availabilities – the website was not very clear but he is getting used to it. Now he knows the availability which is currently the same time every day Monday to Friday.
- He wishes that there would be some weekend availability.
- Also, some Deaf friends don’t really call him via myFriend, even though he has encouraged them! He says it will take time.

What the person(s) in the case thought about it

This was his comments when he started using myFriend:

“I thought it was very confusing at first, but after a few weeks, I gained confidence. The biggest surprise for me was using the interpreter relay service – I thought it was absolutely brilliant! I started using this relay service in January 2012 and I am now a regular user. My first call was to the Garage to book my car in for a service. I became more confident and was really pleased that I was able to call and book the service rather than having to go into the garage to make a face-to-face booking. It makes me lazy though but I realise that I have the same access as all hearing people. I use the service about 3 times a week now”.

Key messages for REACH112

He prefers using Samsung Galaxy S2 phone as it has given him more independence.

I asked him if myFriend has benefitted him. He commented as follows “Definitely. I cannot live without it now and I have been telling all of my friends about it and I have been to their houses to set it up for them. I love my Samsung Galaxy S2 phone even though I am still learning how to use it fully. My favourite thing is the text relay interpreting service. It is so clear and professional. I still prefer oovoo for contacting my deaf friends sometimes because the picture quality is better most of the time. I want to see myFriend expand in the future. It enables us to be more independent”.

Today’s date

7th February 2012

8.4. Sweden REACH112 case study 1

<table>
<thead>
<tr>
<th>Title of case study</th>
<th>Enhancing family cohesion with TC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your name</td>
<td>Field worker</td>
</tr>
</tbody>
</table>

Activity details
### The case in a nutshell

This is a case study on how a family with members living in different parts of Sweden uses their TC devices for communication. A deaf man wanted to share the positive experiences by using TC to talk to family members living far from each other.

A middle aged Deaf man got a TC device for home use and also another one device for his hearing sister and her family, including three younger children. The deaf man also decided to buy a TC license for his parents to include them. As the family members use completely different communication modes the TC concept fits the preferences and capabilities of each member. The mother knows some sign language, so does the sister. The deaf man use voice with his family, receives sign language from the female family members and lipreads his father. The parents also choose to use TC when communicating with the daughter and grandchildren even if they all are hearing. The positive outcome is also that the family members knowing sign language keep their skills even if they are not seeing each other in real life more than a few times a year.

### The context – the agency, individual and life prior to the intervention of REACH112

The Deaf man used text telephone to communicate with his parents before TC. It worked perfectly well, but TC gave the extra dimension in the call with the direct communication, facial expressions and possibility to use sign language where applicable. The telecommunication with his sister was sporadic as she did not have text telephone and the text relay services were impersonal.

### What you wanted to achieve

To enhance inter-communication among members of this family with TC adjusting to the Deaf man.

### A short description of what you did – the REACH112 activity (training, support, provision of equipment)

The deaf man and his sister got TC devices at home. They were trained in how to make calls. There were some network issues that were solved.

The deaf man later decided to buy TC license to his parents to let them be part of the TC communication between the family members. The deaf man himself trained his parents in how to use the TC device.

Interview with the Deaf man about the communication habits of his family.

### What worked well

- The family members quickly adapted the new way of telecommunication with three simultaneous media.
- There were no issues besides network problem in the beginning.
- The telecommunication frequency within the family increased as the video gave the communication an extra dimension. The deaf man and his parents are in a call 2-3 times a week.
- The grandparents actually altered to use TC when calling the daughter and the grandchildren instead of using regular voice telephone. Note that all of them were hearing and speaking.
- The family cohesion strengthened according to the deaf man.

### Problems and/or issues

- Network issues in the beginning.

### What the person(s) in the case thought about it

- The deaf man feels more close to his parents and sister’s family as they more often call each other.
- He also thinks it is cool that his parents prefer to use TC over voice telephony when calling the daughter and the grandchildren.
- The sign language skills within the family are not fading as fast as before during when only using text telephony.
- Neither of the family members would be without their TC devices, especially not the grandchildren who often call their grandparents (very often nowadays as there are a puppy at grandparents).
### Key messages for REACH112

- TC benefits not only deaf and sign language users but also the family members, even those who normally use voice telephone only.

### Today’s date

May 11, 2012

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### 8.5. Sweden REACH112 case study 2

<table>
<thead>
<tr>
<th>Title of case study</th>
<th>Elderly Deaf calling 112 total conversation</th>
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<tbody>
<tr>
<td>Your name</td>
<td>Field Worker</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity details</th>
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</table>

**The case in a nutshell**

Elderly couple calling 112 total conversation for the very first time with their TC device when in emergency. They got in touch with PSAP operator and sign relay. Using sign language to discuss the stomach pain and text for personal information and address. Ambulance arriving shortly. Only one early experience of reaching 112, for about 5 years ago the husband was in emergency and they relied on the hearing daughter (who happened to be on site) to call 112 by voice.

**The context – the agency, individual and life prior to the intervention of REACH112**

The couple has Total Conversation terminal at home since 2004 and are experienced users. Calling friends and using video relay services daily. 112 were inaccessible for TC users. 112 is accessed by textphone, although most deaf users do not have their equipment in use, or by relay services. It is more common to rely on relatives, neighbours or other hearing users nearby when in emergency.

**What you wanted to achieve**

Informing the registered TC users as well as new users that there are accessible 112, convenient to use with sign language and supported by text, by using the national emergency number 112 with their TC devices.

**A short description of what you did – the REACH112 activity (training, support, provision of equipment)**

Installed Total Conversation at PSAP, SOS Alarm in Örebro, trained the operators how to use the terminal together with their operational case system, running 24/7. Establishing a 112 video relay service to relay the emergency calls. The 112 relay service is running 24/7, since the regular VRS only is operational 7-22 weekdays and 9-17 weekends and have no priority for incoming 112 calls. Training the 112 relay operators to handle the 3-party emergency calls. Massive dissemination of “Calling 112 with your video phone” to the deaf and hard-of-hearing community, in TV, newspapers, local magazines, websites, conferences, cultural and social events e.t.c.
Introduction
In order to help evaluate the user experience of Total Conversation, a series of focused case studies was collected involving target users. Those who expressed interest were set up with myFriend and they were provided documents to guide them on use and they had continual support from the Action on Hearing Loss REACH112 team. Regular calls were made to them and feedback was collected at a number of stages during use. The ultimate aim of each case study was to gauge whether or not the experience of Total Conversation made a difference to their lives and in what way.

8.7. Case Study 1 Kate
Background: A Deaf BSL user who is an Outreach worker
Communication use before REACH112

- Contact friends using SMS and email
- Contact businesses using SMS, email and interpreter
- Contact work colleagues using SMS and email
- Contact emergency services using SMS

Feedback given at halfway stage of the case study (Jan 2012)

How have you found using myFriend?

Not that good because picture was frozen a few times and not a smooth picture

Who have you used myFriend to communicate with and how did the calls go? Communicated with my manager via interpreter but the call had to end because interpreter not understanding me due to poor picture

Do you believe myFriend will enhance your communication with others? It has potential but we would need a better broadband as in result to have a better picture

General comments

Myfriend would be good but I have noticed that lots of deaf people don’t have the equipment on at all times which makes it difficult to access to contact them

Tried to contact others but no answers. Many individuals I can’t arrange to call beforehand.

Feedback given at end of the case study (April 2012) On what device(s) and where have you used myFriend?

PC at work

Who have you used myFriend to contact?

My work colleagues, Social services and client’s family

Which of the following myFriend functions have you used?

Person to person Total Conversation call, Person to person Text Only call, Call via Video Relay interpreter and Call via Text Relay interpreter

How did you find making Person to Person calls?

Quite easy. At first the broadband was not that great as it causes the picture a bit blurry and now I have used this today 3 times and the picture seems to be improving.

How did you find making calls using a video relay interpreter?

Quite easy. Picture was slightly blurry but it looks a bit better than it was before. The call connected easily and I could understand the interpreter well. I only had to ask the interpreter to type out an email address that was provided to me. The conversations were fluid most of the time but the picture can be blurry now and then.

How did you find making calls using a text relay interpreter?

Quite easy.

What were the positive features of myFriend?

Able to contact more with external agencies
Clearer to understand when it comes to communicating

Are there any negative features of myFriend or areas that you feel need to be improved?

Picture is improving but still need a better broadband

How often will you use myFriend after the case study ends?

I will continue to use it 2-3 times a month in my working life

Executive Summary

We were keen to offer Kate Total Conversation and involve her in the case study because she is an Outreach worker and deaf BSL user. The nature of her job meant that she regularly interacts with clients in care homes and care home managers. The hope had been to install Total Conversation
software at these care homes but we were unable to do this due to local infrastructure. It proved difficult to convince Kate that TC would be of additional benefit although we were very pleased that she persevered and was able to begin using it.

Kate encountered a large number of technical problems which made it difficult to convince her to persevere with myFriend. When Kate had a system that functioned properly she was able to make a series of calls with the Project Officer during which they were able to ensure that she used all main functions to contact colleagues and business contacts.

It must be said that Kate did not take to using myFriend regularly. This may have been because of the fact that initial experiences were not successful in terms of video quality for BSL.

8.8. Case Study 2  Janet

Background: A Deaf BSL user and English speaker

Communication use before REACH112
Contact friends using SMS
Contact businesses using email

Problems: ‘They will rarely email or text back.’
Contact work colleagues using SMS
Contact emergency services using text direct (typetalk)

Is there a particular aspect of telecommunications that you feel needs to be improved to increase accessibility for people with hearing loss? (please explain)
You have missed out on one main communication that I use daily with my family and

Deaf friends, I regularly use ooVoo and Skype to communicate.

Feedback given at end of the case study (April 2012)

What device(s) have you used myFriend on?
PC at work

Who have you used myFriend to contact?
Work colleagues and work contacts

Which of the following myFriend functions have you used?
Person to person Total Conversation call, Call via Video Relay interpreter and Call via Text Relay interpreter

How did you find making Person to Person calls?
Could be easier. It can be very difficult to answer the call. I’ve had calls but when I answer the link goes so I have to recall them.

How did you find making calls using a video relay interpreter?
Quite difficult. I called my physiotherapist. It connected after a while. I could understand the interpreter quite well but the screen wasn’t very clear. However, I did not need to ask the interpreter to type out any information. The flow of the conversation was good however I must say that I only ever got the answer machine! The instructions I was given were very unclear.

How did you find making calls using a text relay interpreter?
Could be easier. I’m not keen on their ‘boxes’ I much prefer Action on Hearing Loss’s Talk by text.

What were the positive features of myFriend?
It’s available!

Are there any negative features of myFriend or areas that your feel need to be improved?
I am not able to answer a call successful yet. Every time I answer the link goes but still says I’m in call I have to call back and then there are some fiddling around before we can speak. It’s not easy to call
via the interpreter on our home page. The text reply box is very confusing as there is a box for each person with no automatic GA at the end. The technology can be very difficult to follow.

**How often will you use myFriend after the case study ends?**

I will continue to use myFriend a few times a week.

**Any further comments**

Compared to other services that do similar video chats (ooVoo and Skype) I find myFriend more difficult to use, a lot of this is because of the technology issues but I don’t like the text relay part of this.

I am using myFriend at work but will not be using this personally at home. -myFriend is not easy to find your way around if you don’t know any technical things.

**Executive Summary**

Janet regularly commented on technical problems she experienced using myFriend and has not found myFriend to be user friendly. She described herself as a technophobe and struggled with the instructions of use. This could suggest that she was simply satisfied with her current access to telecommunications and saw no benefit in changing.

I believe Janet's low grasp of new technology was the main barrier to her frequently using Total Conversation. This wasn’t helped by initial technical faults. She already used other telecommunication software and didn’t seem to welcome the different services offered through myFriend.

### 8.9. Case Study 3 Melissa

**Background** - A Deaf BSL user who works in finance and is based in London. This case study looked at her use over a month.

**Communication use before REACH112**

Contact friends using SMS

Contact businesses using Textphone, Text Direct (Typetalk) and email

- **Problems:** ‘It’s difficult because sometimes Talk by Text have no available modem, or if I’m travelling and need make a call, or if I need someone to call me back – I don’t have any facilities that enable to answer calls’.

Contact work colleagues using email

- **Problems:** ‘When it’s an emergency and I need to contact the colleague straight away, text message is limited so I don’t have any other way but to call via typetalk or use Talk by Text’.

Contact emergency services using Text Direct o **Problems:** ‘I haven’t need to call emergency services – but if I do, probably will call by typetalk. Only problem is if I’m out of the home and don’t have access to a texphone. Will be difficult to call for emergency help’.

**Is there a particular aspect of telecommunications that you feel needs to be improved to increase accessibility for people with hearing loss? (please explain)**

There needs to be a way for person to call me. Hearing people don’t understand how typetalk works and get nervous using it. So need another way that’s easy for both deaf and hearing people to use. Not many people have textphones so that’s slowly becoming unused. Need to use mobile or pc to help with telecommunications but need find a way where the hearing can call me using a telephone.

**Feedback given at end of the case study (April 2012) Who have you used myFriend to communicate with and how did the calls go?**

My line manager and other work colleagues and contacts. We had issues with calls terminating without explanation but this was resolved once we were installed with the latest versions.

**On what device(s) and where have you used myFriend?**

PC and Laptop at work

Deliverable D7.1 REACH112 Appendices v1.5
Which of the following myFriend functions have you used?
Person to person Total Conversation call, Person to person Text Only call, Call via Video Relay interpreter and Call via Text Relay interpreter

How did you find making Person to Person calls?
Quite easy. There were few issues. During a call my line manager became locked out of myFriend after opening a word document. It was also not too clear how to hang up.

How did you find making calls using a video relay interpreter?
Every time I attempted a call the video froze after 30 seconds. Until then communication was good. But there wasn’t enough time to connect to the person I wanted to call!

What were the positive features of myFriend?
Gives me a choice on type of communication I wish to use Can be used from anywhere No need to separate equipment. Just a laptop.

Are there any negative features of myFriend or areas that your feel need to be improved?
- There are still further developments needed to make it attractive and user friendly
- How often will you use myFriend after the case study ends?
- I will continue to use myFriend a few times a week.

Executive Summary
Melissa showed great enthusiasm for Total Conversation and expressed a genuine need for it. Due to broadband constraints in her office she used the myFriend text only version to communicate with her line manager. She used it daily during the case study period.

Melissa’s feedback was generally positive and it has improved her communication at work. She did experience some technical problems but these proved relatively easy to fix. She attempted Total Conversation, i.e. video calling using a colleague’s PC but was very disappointed to not have a video relay call that she considered successful. After a number of failed attempts she became despondent and therefore reluctant to continue trying.

Melissa tells us that she will continue to use MyFriend in Text only mode and since the Text only version of myFriend has been installed on all staff computers in her office she will be able to communicate in this way with more colleagues.

8.10. Case Study 4  Hilary

Background
Hilary has been involved with Action on Hearing Loss since she joined the British Deaf Association many years ago and has since been involved in Glasgow as part of her professional work. She has binaural sensor neural deafness, moderate loss at the very low end of the sound range, severe loss at the upper end, particularly affecting the normal speech register. She is an English speaker.

What do you think are the positive features of myFriend?
I felt the potential for users to leave video messages would be useful. The link to emergency services will be useful once the system is up and running and reliable. That will depend, in part, on the emergency services carrying out their communication duties effectively. At present this is a notoriously unreliable area. How many people have found loops not switched on, not working, or not maintained in working order (run down batteries

Reliability is crucial – in an emergency there's no time to waste on systems that may not work first time.

Do you think REACH 112 has made a difference in your life?
Not to me, as it stands at present, but future potential for signers will depend on what other telephonic signing services they can access. MyFriend's potential to make a difference to me as a hearing-
impaired non-signing person will depend on:

a) Beating Skype for synchronising audible speech and lip movements (at present, with Skype, the poor lip-sync means it's not as useful for lipreading as it might be)

b) Being assured that the emergency services I might need to contact are equipped and trained, and that I have a chance to register and test their response before I need to use it for real.

The big advantage of Skype, for me, is that the people I might want to communicate with already use Skype – it's a mainstream product.

I've come to the conclusion that, for me, since I don't use Sign and I don't need the interpreter facility, other communication software is a better bet because my friends have the software already and are familiar with it. Also, I can use it on my Mac, which is a big plus for me. I never really made the jump to the PC platform and remain uncomfortable with it. I've just been given an iPad for my birthday as well.

Further comments

- I imagine I'll be much more comfortable with a Mac version, when it's ready. Please keep me on the list for trials when that happens.
- Functioning must be reliable (see above)
- Support features need to be brought together and trialled just as much as the program itself. Despite the program's name, I didn't find the help systems very user friendly (apart from yourself, of course!)
- Good luck with your trials. I know it will be a boon for the signing community.

Executive Summary

Hilary used myFriend from home as opposed to being in an office environment. She took part in trials and was always keen to have person to person calls with the Action on Hearing Loss team me despite having a series of technical faults. As she mentions, she prefers using a mac and has indicated her willingness to use TC on the MAC when it is available.

Hilary recognised the potential benefits of Total Conversation but states that, as a non-BSL user, it will not make a difference in her life. She thinks it will benefit BSL users but since she does not sign and is comfortable with existing telecommunication software, she tells us that she is unlikely to use myFriend in the future.

She recognises the benefit of emergency services contact and raises a good point that a prospective user may wish to test this feature out before it out before using it in an emergency.

8.11. Case Study 5  Laura

Background- Laura is deaf and uses English Language. She is a competent lip reader and does not sign

On what device(s) and where have you used myFriend?
HTC Android Smartphone. I used it out and about.

Who have you used myFriend to contact?
My Doctor to make and confirm appointments.

How did you find making calls using a video relay interpreter?
I could understand the interpreter well and did not need to ask her to type out any information for clarity. However, I am a lip reader and at the beginning of the call the interpreter used BSL so there was confusion as I explained I didn’t understand BSL. The interpreter was not a trained lipspeaker but gave it a go. She was very easy to understand.

What were the positive features of myFriend?
Easy to use

Are there any negative features of myFriend or areas that you feel need to be improved?
This is definitely more for BSL users.

Do you think you will continue to use myFriend in the future?

I wouldn’t use it to call family & friends as none of them are deaf. Also, the background noise/lighting etc. would make it hard for me to lipread. It only worked because of the interpreter having a still camera and white background. I would therefore use it to contact professionals/businesses using the interpreter.

Executive Summary

Laura took part in a trial where she made a call to her doctor. She is a lip reader and after being given a demonstration of myFriend and a description of Total Conversation she decided that it was not for her. However, she did express a need for contacting businesses in a more effective way.

When the call she made was connected, the interpreter immediately started using BSL. This made Laura panic a little and The Project Officer running the trial intervened to explain that she was a lip reader and not a BSL user. The interpreter was very pleasant and more than happy to attempt lip speaking despite not being trained. Laura understood all that she was saying and the conversation clearly flowed well.

Laura concluded that Total Conversation would be beneficial to the signing community but not so much for her. She said that she would use the service to contact businesses in the future.

8.12. Sweden REACH112 case study 3

<table>
<thead>
<tr>
<th>Title of case study</th>
<th>Special needs and TC relay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your name</td>
<td>Field Worker</td>
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</table>

Activity details
The generic video relay services in Sweden offers relayed calls and distance interpreting for sign language users. VRS aims to serve all sign language users. There is no provision/training for special cases other than if there is an third (voice) language then the user need to make a reservation 24 hours in advance.

We have encountered two special cases where the users were having problems using VRS. Interviews have been done with the users and also some discussions with VRS.

**Case 1 – deaf immigrant**

One deaf immigrant from Africa got her TC device summer 2011 and was excited to finally be independent to make calls by herself. After only a few years in Sweden her Swedish sign language skills are still weak. The woman can manage one-to-one conversation and chat in groups if the members are signing clear and in easy-going speed. Also the language level may not be too advanced. In a phone call the communication speed may be a problem and also the language level used. When the immigrant needs to make phone calls she wants to use VRS.

**Case 2 – completely deaf-blind**

One of the users is a deaf-born woman in her 50s who were completely losing her sight in her 20s. She is fluent in sign language and braille and use TC when calling deaf friends. The other party is using real time text to talk back to her. The deaf-blind woman has been an important resource for finding bugs and incompatibilities when using screen reader/braille with Allan eC TC software and is a well-experienced user. Sometimes she wishes to use VRS to make phone calls instead of text relay services as she expresses herself better in sign language than writing.

<table>
<thead>
<tr>
<th>Agency: The generic VRS have been a social service for Deaf individuals the past 10 years. To date the opening hours are 7-20 weekdays and 9-15 weekends, about 200 sign language interpreters are working a month making relayed phone calls and also distance interpreting. If the user wish to make a call that lasts longer than 30 minutes or translation to another language the call needs to be reserved 24 hours in advance.</th>
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<tr>
<td><strong>Individual 1:</strong> The deaf immigrant was limited to use her relatives or neighbours for making calls. She had to write things down and leave everything to the relative/neighbour without being able to take part of what is said in the call. The first two years she was living with her cousin, the communication was limited to body language and writing. Whenever there were phone calls to be made the cousin took responsibility of that. When she got her own apartment, she used to ask her neighbour for help to perform phone calls. Due to lack of communication between the deaf and the “helper” the actions always left a bad feeling of being dependent and being insecure if the call had the desired result.</td>
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<tr>
<td><strong>Individual 2:</strong> The complete deaf-blind user who is fluent in sign language has long been limited to text-telephony and text relay services when making phone calls even if the preferred language for communication is sign language. She wants to be up to date to the telecommunication devices just like her deaf peers.</td>
</tr>
<tr>
<td><strong>What you wanted to achieve</strong> Providing TC devices and also blind-supported devices to the two individuals with the intention to make them able to take part of telecommunication in their preferred ways.</td>
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</table>
A short description of what you did – the REACH112 activity (training, support, provision of equipment)

(a) Omnitor made a home visit to the deaf immigrant to install the TC device and had training how to perform P2P calls as well as relayed calls. Omnitor Support also had some test calls to keep her up to date.

(b) Got tips on new braille devices and screen readers as well as smartphones/tab to test together with TC. Co-operated with deaf-blind to test them. Had lots of discussions on different issues, such as bug fixes and how to use VRS in a good way.

(c) During REACH112 pilot we had focus groups as well as individual interviews. Those special cases were paid extra attention among the users with lots of reactions and thinking. The Deaf immigrant was part of the focus group.

(d) Shorter discussion with VRS customer services about the service level and meeting the needs of each individual.

What worked well

- The deaf immigrant was excited about her new communication tool and to be able to by herself make phone calls. Training and testing calls went smoothly.
- The new user does not have many people/friends to call to. Only a few friends with TC, and is happy to be able to communicate with them.
- Co-operation with the deaf-blind for testing devices and accessibility tools.

Problems and/or issues

- In the very second call from the African woman with VRS, the user encountered huge problems with the operator signing too fast and not willingly to co-operate. The user finally “threw on the handset” and was left in despair. It took 5 months until she dared to perform another VRS call.
- The deaf-blind on the other way have once in a while tried to use VRS, every second time the operator is unable to communicate with her. Either the operator keeps signing or says that they do not serve as text relay.
- VRS suggested the deaf-blind to make an appointment 24 hours in advance to get a typewriter (serving as second language relay). But the velotype-text is not well fitted for text transmission and braille. The deaf-blind was not satisfied with the text transmission.

What the person(s) in the case thought about it

- The deaf immigrant felt like a new world was opening in front of her when we made a home visit and installed her TC device and had one hour of training. *(Comment: She was smiling from ear to ear and “ohh”-ing over the communication with the other part)*
- The best thing was the ability to make relayed calls, even if it later showed that the service sometimes was inaccessible due to different language and communication levels.
- The deaf-blind woman wants to be able to use similar devices as other deaf and to use sign language with deaf peers as well as using VRS.
- She is always excited to test new accessibility tools and devices together with the TC concept.
- Both express the value to be able to communicate in sign language even in telephony calls.
- Not always happy with the VRS calls, never sure if they will be able to use the service.
- Asking Omnitor for advice how to improve the access to VRS, either by a separate or extended service.
<table>
<thead>
<tr>
<th>Key messages for REACH112</th>
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<tbody>
<tr>
<td>• VRS is an important part of the TC concept for Deaf and sign language users. It offers the possibility to access the voice telephony world.</td>
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<tr>
<td>• A supgroup of Deaf is the deaf-blind users. Those who have been Deaf from youth age have sign language as preferred language.</td>
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<tr>
<td>• If TC P2P communication is accessible for the deaf-blind they also wish to use VRS just alike other deaf peers.</td>
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<tr>
<td>• Another subgroup is Deaf with poor language skills in writing/reading, due to inaccessible education, immigration or other reasons, that strong rely on sign language for communication.</td>
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<tr>
<td>• For those people VRS is essential for independently making phone calls for family issues, work issues, contact with care, social services.</td>
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<tr>
<td>• The experiences collected from both individuals in this case have been discussed with VRS.</td>
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</tr>
<tr>
<td>• VRS mean that they do serve all sign language users except for the Deaf-blind who need to make appointments 24 hours in advance.</td>
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<table>
<thead>
<tr>
<th>Any other comments</th>
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<tbody>
<tr>
<td>There is obviously a need for an extended service to cover different communication modes/language skills. Possibly new project ideas after REACH112.</td>
</tr>
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<tr>
<th>Today’s date</th>
<th>May 10th, 2012</th>
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8.13. Sweden Case Study 4

<table>
<thead>
<tr>
<th>Title of case study</th>
<th>Deaf man calling 112 total conversation when colleague passes out</th>
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<tbody>
<tr>
<td>Your name</td>
<td>SOS Alarm</td>
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<table>
<thead>
<tr>
<th>Activity details</th>
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</thead>
<tbody>
<tr>
<td><strong>The case in a nutshell</strong></td>
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<tr>
<td>When a fellow employee suddenly passes out at work, Olle quickly realizes that he needs to get in contact with the emergency service. He then remembers that he has seen a poster with the information that it is now possible to reach 112 through the use of his video phone equipment. Olle therefore dials “112” from his equipment and instantly gets in contact with a SOS-operator through video and a moment later also with the video relay service (sign language interpreter) in the 3-part conversation. The SOS-operator could start the interaction through the sign language interpreter; based on the information from Olle dispatched an ambulance and gave helpful medical advice.</td>
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</table>
The caller:
Olle has previous experiences of contact, direct or indirect, with the emergency number 112. On an earlier occasion he was in a crowd when suddenly a person fainted. Olle quickly asked a person near him to contact 112, by using paper and pen. This however caused a delay because it took a while before the person understood that Olle was deaf. Olle means that if he himself had been able to get in contact with the 112-service the ambulance would probably have been on the scene earlier.

Olle has also used the SMS112-service (text messages) that is available for pre-registered deaf and hearing impaired in Sweden. Though he thinks that it is good that the service exists, he is somewhat dissatisfied with both the relatively long handling time depending on the time it takes to describe the address and circumstances and wait for the response messages – the conversation took by estimate 15-20 minutes. He also thinks that the SMS112 service feels uncertain because of the fact that one doesn’t know if and when the text message reaches the 112-service. It is also a very impersonal way of communication.

Olle has never called 112 by text telephone since the events when help was needed always have occurred outside his home, but he wouldn’t hesitate to use it if necessary.

When he compares the conversation with the 112-service in Total Conversation to his other previous experiences he is positive about the direct contact and by the fact that a sign interpreter gives him the opportunity to describe the situation and therefore quickly get help. He was not familiar with the 3-party video conversation: “To see two video frames in one conversation, that was unusual. They told me just to keep talking, the operator listened and the interpreter translated. The ambulance arrived after just 5-6 minutes. This really flabbergasted me, what a difference compared to my previous emergency calls!”.

A fact that also made Olle especially pleased was the fact that the SOS-operator had already told the medical staff from the ambulance that Olle was deaf and that they therefore had prepared themselves by bringing pen and paper to communicate with him.

The SOS-operator at the 112-service (SOS Alarm):

Magnus is an experienced SOS-operator since 1988. He has no previous experience of communicating with deaf, but has previous experience of handling 112-calls from deaf by text and when the video relay service has called 112 on behalf of deaf person in need of help.

When he answered the call, Olle made the gesture meaning “hello” in sign language, which is similar to the gesture anyone uses by raising ones hand in the air. Olle then probably supposed that Magnus could communicate by sign language and started to sign, so Magnus had to wave “no, no”, and shortly thereafter the sign interpreter joined the conversation.

Magnus thinks that he quickly got a grip of what had happened. The trickiest bit was to establish the address, partly due to the fact that the name of the street was complicated, partly because there are two different words in Swedish for street and road (“gata” and “väg”) but only one in sign language. This was solved by naming a nearby street so that Magnus could find the correct address from that point in the map.

Meantime Magnus called the SOS-centre in Gothenburg who handled the dispatching of the ambulance. He then told them about the fact that Olle was deaf, and therefore they brought pen and paper.

Magnus means that he is very positive to communication in real time video and...
<table>
<thead>
<tr>
<th>What you wanted to achieve</th>
<th>An easy way to communicate with 112 on the same conditions as hearing people, to get fast and accurate help.</th>
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<tbody>
<tr>
<td>A short description of what you did</td>
<td>Installing an IP-line in the SOS-centre to be able to communicate with Total Conversation. Producing and implementing routines for this new way of handling 112-calls. Close cooperation with Omnitor in this. Education and training of SOS-operators to handle TC calls. Manning the TC terminal 24/7. Co-operating with Omnitor in interviewing both the deaf man in emergency and the PSAP operator who was handling the call.</td>
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</table>
| What worked well | • The parties being able in the 112-conversation to communicate in the natural language, the caller in sign language, the SOS-operator in spoken words.  
• The use of a sign interpreter made the conversation easy and in real time  
• The communication in the natural language reduced the handling time from start to dispatch of an ambulance  
• It was an advantage to being able to see the caller to evaluate the situation – a facial expression can be valuable  
• The ambulance was told that the caller was deaf and could therefore prepare themselves with pen and paper |
| Problems and/or issues | • The location of the caller is not included today  
• Because sign language has one word to describe “street” whereas spoken words has two, there was an initial problem to get the right address.  
• To establish the right address the Real Time Text (RTT) could have been used but never was, maybe due to the fact that this was the first REACH 112-call so no one thought of it.  
• Both the caller and the SOS-operator was unfamiliar with 3-party call, both got a little bit confused in the start  
• The sign interpreter at first forgot that she had to make a call manually to the SOS-operator so she could interpret, but after approximately 30 seconds fetched a portable phone and made contact with the SOS-operator. |
| What the person(s) in the case thought about it | • Caller: Thinks this was a fast and effective way of communicating  
• Caller: Happy to be able to communicate directly with sign language  
• Caller: Surprised of the fact that the ambulance arrived only 5-6 minutes from the call was made.  
• SOS-operator: Thinks this was a fast and effective way of communicating  
• SOS-operator: appreciates the added dimension of the sign language interpreters’ interpretation, compared to the static written text he is used to in communication by text telephone.  
• SOS-operator: Thinks there is an added value in seeing the caller  
• SOS-operator: Looks forward to the day when Total Conversation is made permanent in the 112 communication |
### Key messages for REACH112

- An important increase in 112 accessibility for the group of deaf and hard-of-hearing that normally is excluded from the voice telecommunication and 112.
- Text support is useful to clarify personal data, addresses
- RTT is a fast way of communicating with text, especially compared to SMS.
- It is a fast way of communication compared to other ways of communication with deaf; text telephone, SMS112, relay services.
- It is a bonus for the SOS-operator to see the caller and adds another dimension to the 112 call.

### Related documents or links


### Any other comments

The SOS-operators has been given the choice to turn off the camera, due to integrity reasons and the threat level which exists. There is a “button” to switch it off, in which case a sign is shown to the caller stating this. The SOS-operator in this case, Magnus, though showed himself to Olle in this case. This probably increases the feeling of safety to the caller, who is used to see the one he/she is communicating with, although he/she always of course sees the sign interpreter.

### Today’s date

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<tr>
<td>April 3, 2012</td>
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### 8.14. Spanish Case Study – Setting up the REACH112 pilot

[This case study is interesting because it spans the whole of the provision of the service – reflecting on the user engagement. It presents the coordinator perspective in the main and is instructive in the way in which a service can be created and the particular problems which occur.]

The third year of the project has been the most interesting phase of all, as the pilot run all things implemented in the previous phases. In the case of the Spanish pilot, this pilot phase has been running officially from the 1st of May 2011 to the 30th of May 2012, although during June 2012 the service has still been running until the completion of the final project workshop.

#### 8.14.1. Pilot from the Technical point of view

The Pilot phase has been developed without big issues on the technical side, with only minor cuts in the service due to problems of electrical infrastructure, and also due to the change of location of our offices where the system servers are hosted. Although these cuts have not meant incidences for the users, we have learn of alternate ways to organize the activities of maintenance and high availability service in IP communications environments for future occasions. In the tests made with TC, thus including video, we have observed that the configuration of the systems in homes and public administration networks still requires of certain time and effort, since SIP protocols are not yet widely extended, and this has caused some performance problems. We have also noticed problems of connectivity have also been caused by firewalls and NAT configurations from routers provided by the ISP. Both problems should be easily solved when the implementation of IPv6 begins.
8.14.2. Pilot from the User’s point of view.

PSAP

For the participating 112 PSAP, the project has allow them to approach a group that, until now, had few or no opportunities to make direct use of the 112 PSAP of Galicia; it has now gone from not being accessible at all, to providing accessible services in real time and without delays (unlike SMS-type services). Furthermore, they have been able to demonstrate the usability of TC for the general public too.

RELAY

For the participating Text-Relay center, which is a public service of national scope and operative 24x7, it has meant adding another communication channel to the ones it already has at the moment (email, fax…). Although it has not modified the services they render, they have been able to verify the use of other technologies and to see what end users are strongly demanding for the future of the relay centers in Spain, as it has have been confirmed that it is more oriented to providing video-interpretation services through video relay centers.

End Users

The most complicated part of the Spanish pilot is related to the end users and their use of the platform. It is necessary to remember that the contact with the final users was a task assigned to Vodafone, a partner of the project that left after year one, and this created difficulties in the relationship with the deaf user associations and federations. End users were initially contacted by Vodafone, and they were not satisfied with these contacts, and they even claimed not being aware of the project until much later. It is necessary to clarify that contacts of other partners of the pilot with user associations and federations existed from the beginning too (although at a different extent), and that they were informed about everything relevant from the beginning of the project, by both the leader of the pilot and also by representatives of the local PSAP, although the Board of Directors of some of the associations did not have visibility of the project until the departure of Vodafone. We may have avoided these problems if instead of Vodafone having this responsibility, we had included in the consortium some user Federation or Association as partner of the project, or if instead of the Social Marketing Area of Vodafone, it had been the Vodafone Foundation, as they are the ones that work and communicate directly with these user associations and federations.

From the very beginning the final users have considered this project an excellent project to make emergency services more approachable for people with disabilities, but they never saw it as a project for user to user communication, as the choice made by the Spanish Pilot to run RTT only was considered sufficient for P2P communication.

What this pilot has taught us is that people with disabilities usually have to solve problems on their own, so they are comfortable with the use of multiple tools to communicate with their surroundings, i.e:

- Using of a relay service to contact with other people without disabilities.
- Using specific relay platforms to contact with local administration
- Using free video/IM applications to communicate with other people with disabilities (i.e. Skype, Microsoft Messenger, Apple Face Time, etc).
- Using TC or RTT for emergencies.

This means that for their daily use they can require three, four or more different systems and that is something that seems to not matter to them.

We have made clear and demonstrated several times that using the tools provided by the pilot, end-users could:
- Use TC enabled relay services to contact with:
  - people without disabilities
  - Local Administration and other private or public services
  - non-accessible emergency services
- Use of TC to communicate with other people with disabilities.
- Use of TC for contacting emergency services directly

Once this had been explained to them (repeatedly, we must say), they saw the project from a different perspective, and it seemed more interesting to them than the fact of being only used for emergencies. But this explanation, which looks quite simple, has not been fully acknowledged by the users, and in the case of the Spanish pilot it has been mainly due to the fact that the pilot has been based on RTT, although private video-interpretation services do exist in Spain (but not operational 24x7, nor guaranteeing access to emergency centres yet).

Many of the pilot users are use sign language, and that’s why they prefer to continue using systems that have video for their other daily tasks (despite not being TC systems) and why RTT has remained just for emergencies.