



# REACH112 UK

REsponding to All Citizens Needing Help

**UK Project Evaluation of a project part funded by the European Commission in the ICT Pilot Programme**

**2009 - 2012**

Executive Summary

Prepared by Jim Kyle, Centre for Deaf Studies, University of Bristol

[Jim.kyle@bris.ac.uk](mailto:Jim.kyle@bris.ac.uk)

The partners in the UK: Aupix Ltd (infrastructure, software); Action on Hearing Loss (text services), Avon and Somerset Police, Avon Fire and Rescue Service (emergency call handling), Centre for Deaf Studies, University of Bristol (user recruitment, training, support, relay service creation, evaluation)

**Total Conversation is a service for the whole community – not a provision for disabled people.**



## Summary

Total Conversation is the set of European telecoms standards which mandate video, voice and text in Internet communications. The European Commission co-funded **a service implementation of a full provision in five countries** (2009-2012). The pilot service has provided person to person Total Conversation, person to relay services (in video, in voice and in text) and person to emergency services. For the first time, Deaf, hard of hearing, speech disabled, those with learning disabilities and elderly people are able to communicate with mainstream society and with each other.

REACH112 UK has been a complex operation covering actions to

- recruit and train users throughout the value chain (from home user to emergency services)
- deliver appropriate telecoms technology (for registration, communication, tracking and monitoring),
- provide a complete telecoms service
- develop and maintain the software on all platforms – PC, Mac, tablets, smartphones – branded as myFriend and available on [www.myFriendcentral.com](http://www.myFriendcentral.com)
- evaluate users engagement against the targets
- assess the performance of the system.

Data collected from users indicates that Total Conversation is welcomed, life-changing and liberating. There is very little question in the minds of Deaf end users that these services are required. Other users such as relay agents and emergency service call takers have embraced the training needed in order to provide the service and have very positive feedback on its use. Hard of hearing people who are primarily text users may be less ready to embrace video interaction but are shown to be considerable users of the text interaction capacity of the myFriend network.

A cost benefit analysis has been carried out (with counterfactual data from non-REACH112 countries) which confirms that the costs of running such a Total Conversation service per person and per month, are not high – as more users join, there are efficiency gains and the per-person cost reduces. This applies to whole process of registration of users, provision of software, maintenance, information provision to users, clinics, training for all participants. It also applies to the telecoms service in regard to person to person calling (which occupies the majority of call time) and is likely to apply to the support to emergency service direct calling. Clearly relay service provision has cost related closely to the numbers of users and reduces less significantly as number of calls increases.

However, by examining the cost of providing all these services within REACH112, that is, in a true design-for-all environment, actual monthly costs per user will be relatively small (in the range of mobile phone rental costs) for user populations of 2,000 and greater.

It should also be understood that in this context, ‘design for all’ includes provision for all voicephone users (ie the mainstream telephony system). When a Deaf or hard of hearing user makes a call through a relay service, then a mainstream phone user is enabled in the interaction.



The UK project has been met with great enthusiasm. It has overcome major obstacles in reaching a wide range of users. It has evolved with the technological environment and has produced mobile, ubiquitous solutions which enthuse and encourage the inclusion of this group of people who have hitherto had difficulty with voice telephony.



## The Starting Point

“REACH112 aims to make the telephony system more inclusive for people with disabilities and more valuable to all people by enabling new communication modalities.  
 ....Put very simply, REACH112 offers a new telephone service which supports video, voice and text. REACH112 also addresses interoperability issues with emergency services ensuring they are accessible to disabled users.” (Final proposal to EC, September 2008)

Five pilots of TC were set up to demonstrate person to person interaction, person to relay transactions and person to emergency services (through relay and directly). This report deals primarily with the UK service development.

## The REACH112 implementation

The project was sited in five countries – each used the same technical specification and an agreed platform – so that the pilots are inter-operable with the intention of extending the service to all of the EU. The UK approach is summarised in Table 1.

**Table 1: Implementation**

Pilot-site	Technology Developed/Supplied	Actions
All of UK (open, free access through website registration and download), direct Emergency services access in Bristol area	Total Conversation infrastructure (for calling, monitoring, routing) User database, online registration and account management Videophones/user endpoints supplied Total Conversation myFriend software developed for all platforms; centralised server for videomail; dynamic video server for information content/ support in sign language Text-only version of TC software implemented Full back office management for call tracking and billing	User base created by direct recruitment through workshops, presentations; User clinics, home visits, online support, email support, sign language videos, webinars; Relay agents recruited and trained; Emergency service call takers trained User systems trials Relay service operational – April 2011- July 2012 Evaluation: focus groups for end user, emergency service; feedback from relay agents; case studies collected Partner self assessments collected; Extensive traffic measurement and analysis Cost benefit analysis Sustainability and business planning Service continuing 2012 onwards

The REACH112 project was realised in the UK as the myFriend Network ([www.myfriendcentral.com](http://www.myfriendcentral.com)) where all registration, help, information and downloads can be found. MyFriend software (a free download) works on PC, Apple Mac, videophones, adapted netbooks, Android smartphones, iPhone, iPad and iPodTouch.

## UK Outcomes

In creating and managing a Total Conversation service across the UK, the following have been implemented in the period of the full pilot (the period evaluated was May 2011- May 2012)

- Home or personal installations of Total Conversation (TC) and Real Time Text installations – ie implementation of the European standard and adherence to a common platform specification
- Supplied equipment or free downloads to all platforms – computers to smartphones



- Framework for technical registration, download and online support service to users network infrastructure - a new telephone system
- Telecoms Relay Service – weekdays 9am-6pm for sign language; 24/7 service for text
- Text Relay Gateway – link to 18001; textphone connection – link to 180015
- Integration with Talk by Text (Real Time Text system)
- Access to 999 in cooperation with BT and set up of police security checks (secure servers to record all conversations and 24 hour contact point)
- Online User registration interface and online support
- Where no 3G mobile services, the smartphone application reverts to text communication
- User feedback system by calling 55117788 or by email to [support@myfriendcentral.com](mailto:support@myfriendcentral.com)
- Training for relay agents – sign language interpreters, lip-speakers and speech to text operators – online in our learning management system and also on site in emergency call centres

#### myFriend service statistics – as of June 2012

- Over 1700 registered users and 400 text-only users
- Over 6,000 calls per month
- Over 21,000 minutes of calls per month
- Over 1,600 relay calls per month
- 25 relay agents (mostly sign language interpreters) trained and contracted and using the contact centre client – based in three centres – Bristol, Gloucester and Cardiff - with network inter-connection
- 45 call takers at police & fire emergency centres – trained and using the system to receive calls
- Collected evidence from UK, from a series of structured trials in 2011 and 2012
- Users’ responses collected from Case Studies, Focus Groups with all users, feedback from helpline, workshops and clinics
- and counterfactual data from Ireland in order to allow the cost benefit analysis

REACH112 has been a fully functioning, open access trial for all users who do not easily use a voice phone (Deaf, hard of hearing, elderly, and those with learning difficulties).

## Total Conversation Traffic

In the UK, the Total Conversation network did not exist at the start of the project and there was no TC relay service until the beginning of the pilot. The user base had to be grown from almost zero. Total Conversation calls are subject to variables which affect the completion of the call. We adopted a strict criterion of success – that a call should last at least 10 seconds (enough time for the media to be exchanged). The UK ‘success rate’ was 77% - better than the other pilots.

During the pilot (May 2011-May 2012), 40,268 *successful* calls were made from users who increased in number each month to reach 1,700 registered users. This figure continues to grow after the end of the project as the Total Conversation service continues to be offered. Major growth is seen among Deaf sign language users.

A very important point to make is that the numbers who become regular users of the TC service (i.e. make calls) is rather less than the numbers who register in the first place. In the UK pilot (with free access and free calls) this was around 20%. While this seems low, even in a mature market such as Sweden, active users were only 37% of those registered. In the UK, this disparity probably reflects



the lack of familiarity with the remote communication medium. We can expect this proportion to grow but not necessarily to exceed the figures reported in Sweden.

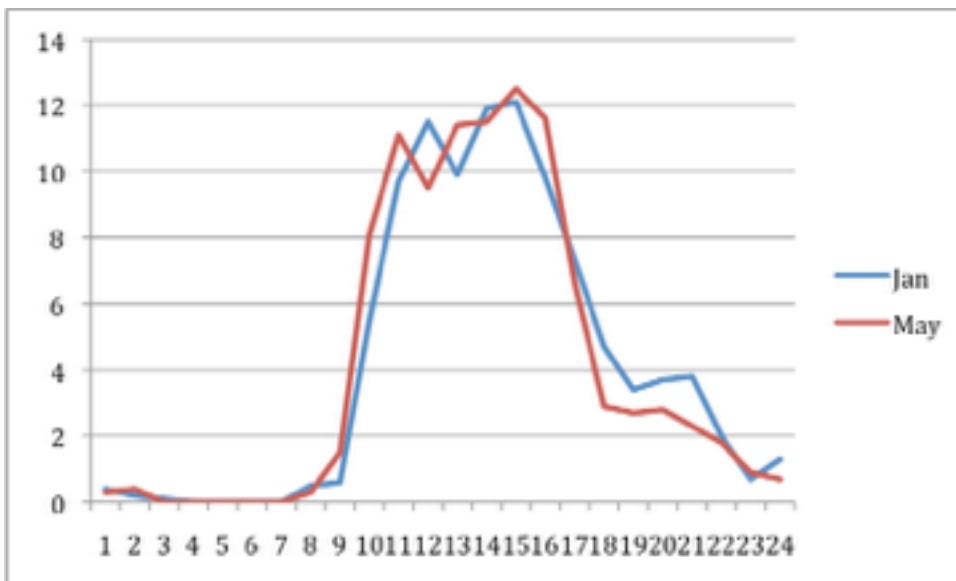
Users report satisfaction with the relay service. Use of relay service increased month on month although the average number of relay calls made per month was less than seven. An interesting aspect to consider is the total length of relay calls as this is often used as a cost driver or planning statistic. The total monthly figures for the use of relay services was around 25 minutes per active user ie inside the OfCom suggested allowance.

Person to person calls are typically longer than calls to relay services - people wish to talk to friends and family as the priority. VRS is only a part of the service framework.

A total of 8,673 videomail messages were left during the pilot.

The pattern of use was similar to what one might expect - peak use is in the early afternoon 13.00 to 15.00.

**Figure 1: Time of day and percentage of use UK (January and May 2012- all successful calls)**



### ***Transnational comparisons***

The UK had fewer calls than in France or Sweden although a better success rate for 10 second connections. Relay service calls are fewer than one might expect, and the pattern converges on around 6 calls to relay per month per active user in France, Sweden and the UK. Relay minutes per user per month are also quite similar especially in Sweden and in the UK and as indicated earlier, tend to be round 25 minutes per month. Since Sweden has had VRS for over 10 years, we can see that the UK figures are a good indication of the outcome of building a service which has no cost barrier to end users.



## ***Engagement***

Perhaps the most significant aspect is the notion that many more hearing people were enabled in communication through the relay service, than deaf or hard of hearing callers. This multiplier effect is important. It can be calculated in two ways: from the total number of relay calls made in the time period of the pilot across all countries and also separately on the UK users for the period March to May 2012. In the former case, where more mature video services are available in France and Sweden, the ratio of completed relay calls to all registered users is  $124,000/7,500 = 16.5$ . We consider that is is something of an over-estimate of impact as we cannot verify all connections across Europe. We suggest on the basis of UK estimated completions of the third leg of the relay call, that the figure might 25 % less. However a much more conservative figure is to consider calls from active users in the UK where the service is very new. In this case the ratio of calls made to hearing people through the relay service, ranges between 5.8 and 6.5 per month. One can argue that these calls may be made to different people and so the figure for actual impact per active user on hearing voicephone users should be measured over a period of more than one month. Taking only a two month period leads us to a similar figure that of the overall figure in the first analysis – ie 12 hearing voicephone users are contacted by each active Deaf person in a two month period.

This gives us a simple estimate that typically for each Deaf user of a Total Conversation service there will be an impact on 12 hearing people.

When this statistic is offered to the hearing community, it is often dismissed as a project effect and not a change in behaviour. Of course, that is the point, REACH112 has connected Deaf and hard of hearing people to society without having to change the behaviour of the majority. From a Deaf person's point of view this is a huge step towards inclusion.

## **User Trials & Progress**

The implementation of Total Conversation bring challenges to the end users and to the support staff. End users have to learn a new way of communicating (ie a completely new concept) and have to understand how to use the equipment or software. Not surprisingly, then, the data collected in the UK in May 2011 and July 2011 at the start of the pilot showed many problems for the users. This accelerated the production of new versions of software and greater intervention from field workers (workshops, clinics and home visits) and as a result, created a much more confident user group by the time of the second trial in April 2012. Users maintained that communication was easy and reliable; relay agents maintained that they could easily follow the signing of the Deaf caller. Typically ratings of success, video quality and ease of understanding were in the high 80% and 90%.

However, in all cases, there remain issues in regard to UK broadband services and user endpoint failures. Quality of Service implementation in this regard was not within the power of REACH112. The TC service offered is “over the top” of a network designed for quite different purposes. The



impact of lack of QoS control in networks and the lack of prioritisation of video calls (as compared to voice calls) will continue to be a problem for end users.

In the UK, there are issues in regard to corporate networks where SIP traffic may be blocked and installation of software such as that for Total Conversation has to be negotiated. Solutions are relatively easy to set up but there may be cost implications.

The main feedback from the user trials was that problems had been overcome during the pilot and there was a functioning and effective Total Conversation service which had adapted to the changes in technologies i.e. provided good applications for tablets and Smartphones.

## Cost-Benefit Analysis for REACH112

We examined the benefits by asking people i.e. by interviews with participants in REACH112 and then comparing these responses to the responses of similar people who did not take part in the REACH112 pilot. We have done this in two Total Conversation pilots (UK and Sweden) and two non-pilot countries (Finland and Ireland).

In order to calculate costs, we considered the overall expenditure by UK partners for the implementation (i.e. running costs excluding trials, or reporting or dissemination). We used the number of registered users as the primary driver and then added a weighting<sup>1</sup> of the numbers of hearing people who benefited through use of the relay service. We are thereby examining the costs of an implementation of a Total Conversation Service – not a help system for disabled users. This gave a monthly cost per beneficiary of around £8 (around £10, if the hearing beneficiaries are removed). This cost includes contracted relay agents, field workers, infrastructure management and software development. It also includes end user support and training. Although we can see a reduction in overall costs of running the service as the numbers of users increase (in our case up to 2,000), we can also predict that the relay costs are likely to be relatively stable going forward as increases in numbers of calls (which reduce cost) also increase the requirement on relay services to provide the capacity to maintain waiting times at an acceptable level and to meet agreed key performance indicators. It can be predicted also that increase in relay service time towards a 24 hour service would increase the monthly costs per user by two thirds to three quarters. Increase to allow for emergency service relay access would probably treble the baseline costs (because there are training and experience issues and there are simply not enough current interpreters to cover the service at emergency level at the present time). At around 5,000 users the infrastructure costs are likely to reduce and the relay costs would again begin to stabilise.

However, whether this particular programme is viewed as “value for money” requires some form of value judgement. We attempted to obtain this by interviewing users in Bristol and comparing their responses to a group in Dublin (where there is no Total Conversation service).

---

<sup>1</sup> The weighting was half of the number of relay call receivers but weighted by the relative proportion of extent (in minutes) of relay calls to person to person calls. This turns out to be a minor adjustment in the driver but it is worthwhile to consider the receivers of relay calls as beneficiaries of the service.





The Bristol group used Total Conversation nearly every day. They varied in their extent of communication with hearing members of the family but only a quarter of the Bristol TC users thought of using TC or the relay service to talk to hearing members of the family. It seems clear that this has not yet entered into their thinking about daily communication (although it can be clearly argued that communication (or not) with the family members has been long established and whatever the arrangements (or not) for this, they are not likely to change immediately on the advance of technology). If this lack of expectation of usability of telecoms begins to change as Total Conversation becomes established, then it could put extra strain on relay services and potentially increase cost. Nevertheless, it is important to continue to bear in mind that Total Conversation service is much more than provision of relay services.

Even with these caveats in the UK, when asked how they made appointments with a doctor, for example, half of the Deaf interviewees said they used Total Conversation relay. Asked about the use of TC relay service, the Bristol users mentioned

I had a car accident. I contacted the insurance company through the relay and call was successful without any difficulties. I was able to use my own language.

Despite the apparent progress here, the adoption of Total Conversation is only at an early stage. The social benefits in greater contribution to society are as yet, hard to quantify from this data.

### ***Cost Utility***

Although UK participants are likely to use Total Conversation for social purposes, more than half would still ask a hearing person if an appointment had to be made. Changing this behaviour pattern is likely to take some time. The finding is consistent with the view that adoption of Total Conversation has some way to go in order to be the means of choice for distance communication. However, there is a clear indication that Swedish respondents feel more independent and more confident in emergency. They have a greater reliance on Total Conversation and relay services.

At this moment, we cannot fully quantify change in quality of life and do not have the quantitative measurements which would ideally show this beyond doubt in such a relatively short time period of the pilot. However, all of the data point in the same direction – Total Conversation services greatly help users to become more independent. If this is the case, they are less of a drain on public services, are more likely to be effective in employment and, as a result, are more likely to become net contributors to society. Cost per Deaf or hard of hearing user is comparable to the costs of servicing a mobile phone on a contract.

## **User engagement, experiences and views**

Although users in the past, could and do use web based video services to talk to each other in sign language, there has been no perception of ownership of such services, no support and no sense in which this online video service advanced the cause of equality. It was by and large, another work-around by Deaf people where a system set up by and for, hearing people could be adapted for Deaf



use. Only with the creation of the REACH112 Total Conversation service was there an open system driven by Deaf people, supported by Deaf people and which was trying to be responsive to Deaf comments and feedback.

## Focus Groups

In almost all cases, end users were very enthusiastic about the Total Conversation pilot offerings. It was likely to make a huge difference to people's lives

.. it will become for us a way to feel equal to hearing people, which would help us to move on to other things.

End users expressed views about the relay service.

I love TC. Even if I am calling authorities and others using technical terms, the VRS and sign language make me being able to communicate and understand the issues in the conversation. With text only that would be impossible.

However, the absolute over-riding priority from all end users was that the service *must* continue.

Relay agents also offered very positive feedback on the service. UK interpreters who were contracted specifically for the relay services were concerned with rates of pay and conditions of service. We had prepared an extensive Code of Practice and protocol description for use by relay agents and this was seen to be necessary.

One important point raised by UK relay agents was the need for Deaf users of the relay service, to be offered training in telephony. This arose from the fact that Deaf people may not understand fully what happens in a relay and may be puzzled by the pauses introduced when waiting for the hearing person to answer or to respond to questions. They may also not be able to take control of the call and may expect the relay agent to manage the interaction for them.

Some of the anticipated issues did not materialise – e.g. that different Deaf people would have different sign language dialects which could make it difficult to understand. The interpreters' view is that they are expected to deal with a wide range of sign language varieties and this was not an especial problem in relay.

Emergency Service call takers agreed that this was a valuable service but the call numbers were (and would be) few in number. As a result, this was likely to require ongoing and updating training for call takers. There was some realisation that hearing callers are now increasingly likely to use smartphones to connect and that it will be only a short time before video calling to emergency services (by hearing people) will become a norm. There was considerable interest from these emergency service call takers who had taken calls from the end users. However, they did not naturally embrace the concept of using video even though they saw the inevitability of telecoms moving towards the visual medium.



“ .... seeing a person by a tractor with his legs chopped off, could cause significant problems for the call taker ..”

Similarly, fire service call takers did not see the absolute priority in “seeing” the caller or seeing the incident. Police responses were not dissimilar but emphasised the absolute need to have a relay agent on call at all times and to be sure that the response time is very short, as close to the response times required of the police i.e. 10 seconds. This would place enormous demands on a full Total Conversation service and in our view would take several years to build the capacity to be able to meet this key performance indicator.

Although it had been thought (in the UK, particularly) that the emergency call takers would need little training about Deaf people and their language choices, it turned out that lack of information on this topic detracted from their performance and led them to try to interact in an ineffective manner e.g. without empathy and eye contact. It would seem that more consideration needs to be given to providing learning resource materials (perhaps online) for emergency call takers to work on.

There is a general view of success among the relay agents and among the call takers in emergency service centres. The former have a different perspective as it opens up a new area of employment whereas the latter are concerned about changes in working practices for a small number of calls.

### ***Starting Off***

It should be relatively clear by this stage that there is an enormous demand from the Deaf community to provide a solution for distance communication. However, the Deaf community in many countries have already discovered opportunities with video applications which are freely available on the Internet and in many cases are already using them.

This creates two difficulties – the first is that the users are already creating their own micro-networks and are interacting with them with greater or lesser degrees of satisfaction. A new programme has to be able to displace the existing pattern of interaction.

The second is that, by part solving this communication issue with incomplete tools and non-services, the Deaf community takes away the responsibility from the hearing community to offer and to support, a solution which has a ‘design for all’ label.

We see this tension most clearly in the cases supplied by Action on Hearing Loss where the members of staff have already part solved their communication issues and a new entrant – i.e. Total Conversation, is not necessarily embraced fully.

### ***Hard of hearing***

One aspect which REACH112 has found difficult is how to implement Total Conversation for hard of hearing users. REACH112 offered any combination of video, voice and text but the users tended to focus on either video or text. The case notes from Action on Hearing Loss, highlight the



difficulties faced by hard of hearing users, trying to determine for themselves, the advantage of being able to see the other person in the call.

It may seem obvious that being able to see and read the emotions on the other person's face is an advantage, yet with highly literate hard of hearing people, the use of text has become the most important aspect of communication. The cases presented seem to indicate a reluctance to alter behaviour. They often said, 'this is not for me- it is for signing Deaf people'.

Since hard of hearing people form a much larger group and do still have problems with the telephone, it is essential to examine in more detail the experiences of this group when visual communication is offered. However, we do not believe this is an argument for a separate service but rather for a single service which caters flexibly for all.

### ***Person to Person***

There is no doubt that there was great success for the Total Conversation concept among Deaf people. Cases tell of the liberation felt by the discovery of distance communication.

The cases also indicate that the awareness of the value of Total Conversation does not by itself translate into action on the part of potential users. It requires a good deal of support and instruction, workshops and clinics, peer support and ultimately requires critical mass in producing a sustainable call network. The comments that 'I tried to call people but no one answered' and that 'I never receive any calls or people do not call back' are common in the mass of feedback data. This is partly social in that the community of users have not yet developed an etiquette in regard to call behaviour and partly technical in that end points are often not connected to the network – mainly because the user switches them off. The advent of always-on Smartphone applications will make an enormous difference to this situation.

### ***Person to Relay***

What is most welcome in all the accounts is the possibility to have an on-demand relay service. It is this component which leads to statements on equality and inclusion. Case studies indicate that being able to self-manage problems, to make arrangements independently and to have a readily available interface to society as a whole is perhaps the single most important factor in enabling the Deaf and hard of hearing communities.

The possibility however, to have this combined with speech and text is also very important. Cases also refer to the use of text for particular purposes and in one case, the user made connection and announced that she did not use sign language and demanded lip-speaking from the relay agent (which in that instance, was successful). Agents in Total Conversation relay may need to move towards *agent plus* status where they are able to manage all three of the options of text relay, sign language relay and speech relay.



Feedback from relay agents who began to work on this as a result of REACH112, expressed their enthusiasm for this service as they perceive the obvious advantage of being able to support many more users in a shorter space of time than they can with on-site interpreting.

### ***Person to Emergency Services***

Response from emergency service call takers indicate the belief that this service can save lives. To do so effectively, it will need to be embedded in the mainstream telephony system and become part of the “normal” call patterns. It will need to be implemented in software solutions which sit alongside the current call handling interfaces. End users, as indicated in the analysis for cost benefit, are still likely to reach for a hearing person in case of problem. It may take several years to alter this reaction and in our view, will require the adoption of video interaction in telecommunications by hearing people.

### ***Creating a service***

The creation of a new means of communicating within a community is not always easy. Even if the technology is proven, without establishing the community engagement and influence on the project from the outset, the achievements will be reduced.

The cases and the feedback say clearly that the smart and evolving technology has to be supported at both ends by the community of users and by the decision-makers and policy-makers.

### ***Exploiting the service***

In the end, it is this part which worried most users – ‘what happens if there is no funding?’ This uncertainty appears again and again as a pressure on REACH112, that if the service is withdrawn

“...I would be frustrated and I would revert back to how I was before, when my mental health problems were worse.”

The project addresses this aspect of exploitation and sustainability but the case studies make it a real, personal and social issue. We do not believe that the community of users will tolerate further pilot studies in the UK where there is a threat that the service can be withdrawn. The data signals clearly that implementation must now be put in place, albeit with adjustment and adaptations to technical and social change as it progresses.

## **Final Comments**

REACH112 was ambitious in every respect. It provided a technical solution to access for those who would not be able comfortably to use a voice phone. That technical solution is beyond ‘proof of concept’ and is now at implementation stage. The solution works across almost all software platforms and is provided openly to all users.



There needs to be a large scale awareness raising for all actors in the value chain. The technological concept is simple but the practical engagement requires nurturing.

## ***Outcomes***

The advances through the Total Conversation service have been enormous in regard to the perceptions of end users concerning the move towards equality. Users have found themselves more in control, more able to influence daily lives and of course, can have greater aspirations.

Existing data/Internet services are challenged by the developments in terms of providing resilience to Total Conversation services and ensuring capacity for time critical services. Connections to relay centres and connections to emergency call centres may need to be improved in order to cope with this innovation.

Public service delivery practices at every stage are challenged; with the most significant being the contact with emergency services. Although there was considerable enthusiasm from call takers and managers, moving the emergency services to the next generation will be a long term task.

## ***In conclusion***

We see enormous demand, general acceptance of the concept and the pathway to the human resource creation to support the development. We do not believe the cost is prohibitive and can show both the cost effectiveness of the services as well as a clear pathway to reduction in costs as user registrations increase.

REACH112 UK has been a full scale, national implementation of Total Conversation and a monitored trial of video relay services. It removed all cost barriers to end users, to relay agents, to emergency services and to the public and private sector, who for the first time could talk to and receive calls from, Deaf people. We believe it provides clear insight into how the community would function when this service was provided to all. It contradicts many of the suggestions in previous public campaigns and reports about the cost and about the immediate impact of offering this service. In our view it will take many years to build the user base, to instruct and support on such a wide scale, to build relay capacity and especially, many more years to provide direct access to emergency services. To produce a 24 hour service to the level of the key performance indicators suggested recently by OfCom for text relay and by the police partners in REACH112, for responses by relay agents in emergency, will take some considerable time to achieve. There is not the sign language interpreter capacity nor the lip-speaking or speech to text capability in the UK at present; a training programme for relay agents and for relay agents plus (ie multi-modality operators) is urgently required.

However, it is also true that the service implementation needs to begin now if there is to be hope of creating the change in the near future. The community of users who have experienced Total Conversation services will not return to further pilot arrangements and now expect implementation.



It is true also that the running costs are relatively low and that the benefits we see in a mature market such as Sweden, are high. Deaf users are more independent and have become net contributors to society.

There remains a challenge to engage with hard of hearing users who do not use voice phones. Trials with speech relay were very successful (where the hard of hearing user could see as well as lipread/hear the relay agent) and we know that many of hard of hearing users value being able to see the other person in a call. However, it will take time to implement such a service with hard of hearing people in the UK, who are predominantly older and retired from employment.

Having gone through this process, REACH112 UK (or as it continues to function in the myFriend Network) can offer the framework, protocols, practices and training, which will be of value to policy makers, telecoms operators, Internet service providers, all users in the value chain and to relay agents.

This has been a vital and significant pilot programme which will continue to offer support to all agencies in this field.

## Key Learning Points

1. Total Conversation is a telecoms protocol *for all* and needs to be understood as a **Service** which serves both deaf and hearing communities – it is not a provision just to help disabled people.
2. Consequently, the Total Conversation service needs to be a mainstream service, offering greater efficiency in the workplace, in public sector provision and in professional practice. It offers simple advances in areas such as reduction in unnecessary travel to meetings, and also, creates the basis for inclusion for those who do not use voice phones.
3. The cost model has to be built from this point of view and cannot be financially sustained as a “catch-up, bolt-on” service “for the disabled”. At the same time, in the period of build-up of service, costs are likely to be much less than previously claimed by campaigns.
4. Total Conversation service evolves - it is not instantly adopted. In this respect, the value builds and the end user perception of value and expectation of cost will become embedded in lifestyle expenditure.
5. “Total Conversation-as-telecoms” introduces many new ethical and privacy issues (especially in regard to use of video), which need to be closely monitored through a Code of Practice and support to agencies and individuals who provide the service.



6. In all aspects, from end-users through relay agents to call takers in emergency and non-emergency roles, there is a need for training. Such training is needed to comply with an agreed code of practice and professional standardisation.
7. Direct access to Emergency Service is a key undertaking in UK society. Yet current reliance on voice communication (at the control centres) and the inability of individual emergency service agencies to share data, ensure that inclusion for all cannot be provided. With no apparent central control or direction on protocol nor standardisation on systems, incorporation of Total Conversation in the UK Emergency Control Centres is some way off. Changes to this situation require central governance and monitoring.
8. REACH112 has provided a full scale pilot of an open access Total Conversation Service. There is overwhelming positive feedback on its functionality. User demand now aspires to implementation.
9. In aspiring to the mainstream service, based on a model of beneficiaries who are hearing and Deaf/hard of hearing, there is a need for pump priming to ensure a coordinated and fully networked service is in place; and is evaluated in a way which provides sufficient detail for commercialisation and provision of value added service by Communication Providers and ISPs. Such initial pump priming is likely to be needed from public funds.