

EICTA recommendations on Total Conversation – from Vision to Implementation

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1. Background and introduction

Many facets of our society depend upon technology in general, and Information and Communications Technology (ICT) in particular. The use of this ICT has brought huge economical and social advances for many of Europe's citizens, but we believe that all citizens should be able to participate and enjoy these benefits. This is our vision of Digital Inclusion; not just increasing access and making services more widely available or easier to use, but also assisting people to use ICT to make their lives richer and to be able to fully engage in society at all levels.

Total Conversation means a telecommunications service enabling voice, text and video communication at the same time and in real time. This service is becoming feasible as soon as telecommunications services will be based on Internet Protocol (IP) and the capacity and capability of networks and terminal equipment is sufficient to provide satisfactory quality for multimedia services. Standards for multimedia services have been developed in international standardization organizations such as ITU, IETF and 3GPP and they are generally available. IP Multimedia Subsystem (IMS)¹ is envisaged to be the architectural framework to support this service both in fixed and mobile environment.

Total Conversation service based on IP and IMS will supersede the current separate voice, text and video services based on circuit switched technologies. However, the transition period is rather lengthy requiring a major upgrade of networks and terminals that is expected to take 5 – 10 years in mobile environment and 3 – 5 years in fixed broadband environment. The implementation timetables will vary by country and by operator significantly and they may go beyond the indicated periods.

Disabled users who cannot use voice services are more and more moving away from specific text services to mainstream services (Instant messaging and SMS). However, these mainstream services do not fully satisfy the needs of disabled users as they are not providing a real time experience. The legacy services are still important for certain users; in particular, they are providing access to relay services. The multitude of different text telephone standards in Europe poses a challenge for migration from legacy to new generation. Video services for sign language users are already available on mobile and fixed broadband networks, and will continue with improved performance until total conversation services supersede them.

¹ See http://en.wikipedia.org/wiki/IP_Multimedia_Subsystem

In the light of envisaged timetable and urgent needs of text service by users, an implementation strategy for stand alone real time text service is set out in this paper:

- Service is based on the capabilities of current mobile (GPRS, 3G) and broadband networks and terminals
- There is a clearly defined evolution path to Total Conversation service
 - T.140, RTP², UDP http://en.wikipedia.org/wiki/User_Datagram_Protocol, and SIP³ are basic protocols that pave the way for Total Conversation service
 - The interfaces will be based on open international standards
 - Terminals and services using deviating protocols due to short term technological reasons may be used but they are encapsulated and interoperability is ensured via gateways
- Access to legacy text services and possibly provisionally to relay services is provided via gateways
- Access to emergency and relay services (on long term) is implemented via standard interfaces (i.e. emergency and relay service centers are equipped with the standard interfaces).

2. State of play

We have identified four technology and/or service providers that are actively promoting IP based real time text solutions operating either on fixed or mobile platforms or on both in European markets:

AnnieS (Dutch Foundation) has developed a Java client operating on Blackberry™ terminal and server software that provides connectivity between terminals and gateways to legacy text phones and to Omnitor server. AnnieS cooperates with KPN.

Netwise (owned by Ericsson) has developed a product called Flexitext operating both PC and mobile phone environment (Java Client) through a server that provides connectivity between terminals and to legacy terminals and relay service. This system is backed by Swedish Telecommunication Administration and is piloted in Sweden, Denmark and Germany.

Omnitor has developed a product called Allan eC operating on PC platform. Voice, text and video services are provided. Terminals communicate through a server that provides also gateway functions. The system is operated by Omnitor in Sweden.

RNID (UK Charity) has developed Java clients that operate on certain mobile phones. Mobile phones communicate via server that provides also gateways to legacy (BT Text Direct) text phones and relay services. RNID provides text service including relay service in the UK.

² See http://en.wikipedia.org/wiki/Real-time_Transport_Protocol

³ See http://en.wikipedia.org/wiki/Session_Initiation_Protocol

These systems have been widely demonstrated and they are a good starting point for broader scale deployment and additional user trials. However, they do not comply fully with the set of standards suggested in this document. A reason for this is that services in mobile domain are implemented on a GPRS platform⁴ that has resulted in streamlining efforts (proprietary solutions). The current architectures require that interoperability between various systems can be reached only through gateways because the terminal interfaces deviate. It is clear that UMTS⁵ would solve these kinds of problems. There is a risk that next generation text services will develop into similar patchwork as current text telephone services if how to achieve interoperability is not paid attention to.

3. Implementation strategy

Although it is foreseen that multimedia services will be mainstream services that are attractive to a large number of users, disability organizations, governments and the European Commission play an important role in supporting the fast launch of real time text service in a way that services are interoperable European wide.

It has been demonstrated that clients that can be downloaded to terminals are a viable mechanism to introduce real-time text service. There are a number of high end mobile terminal types that could support this functionality and have alphanumeric key board and display. By the same token, general purpose PC's with broadband connection can be used as text terminals as soon as a client is loaded down.

It is not appropriate to select any specific specification or provider as a model at this stage. However, it is necessary to agree upon a common interface standard in order to facilitate a long term implementation and smooth transition to Total Conversation. The simplified architecture is depicted in diagram 1.

Recommendation 1: European Commission should call all stakeholders (NGOs, Governments and industry) to agree upon a common set of interface standards for real time text service having a clear evolution path to Total Conversation service. European Commission should encourage the application of this standard.

This interface standard would facilitate the compatibility of text terminals and simplify connections to emergency and relay services later on without risking the piloting of existing services. It is important to collect information on users' experiences of these trials.

Recommendation 2: Stakeholders should solicit the clients of current text service providers to carry out user experience surveys and make this information public.

This information would help industry to enhance user interfaces and quality of service.

⁴ See http://en.wikipedia.org/wiki/General_Packet_Radio_Service

⁵ See http://en.wikipedia.org/wiki/Universal_Mobile_Telecommunications_System

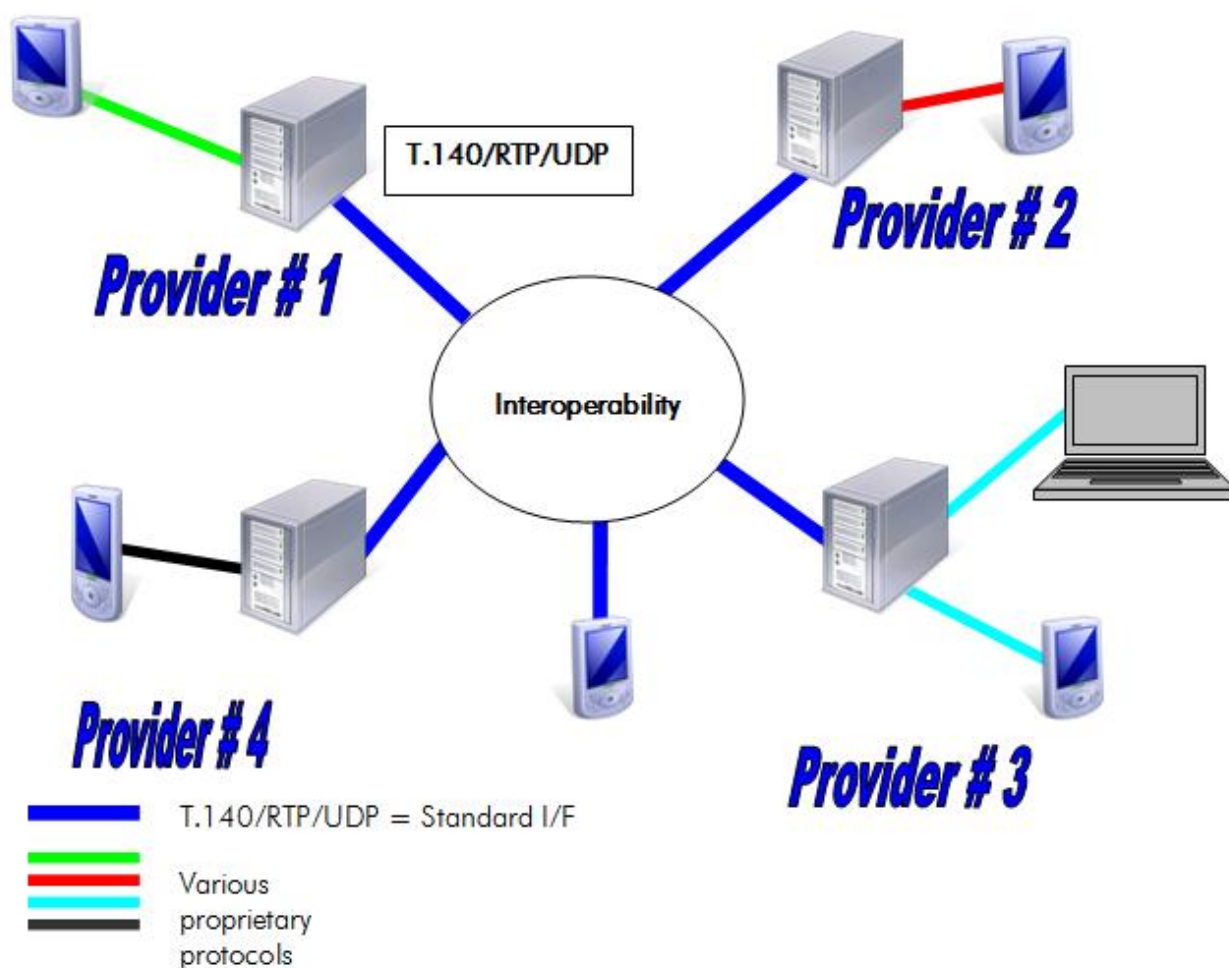


Diagram 1: Simplified architecture for Real time text service implementation

As soon as the technological evolution allows, terminal interfaces should be made compatible with the standard interfaces enabling end-to-end connectivity between terminals or points of services (e.g. emergency and relay services) without the involvement of servers except in call set up and release phase. Industry should commit to developing software clients operating in certain mobile devices and PC's.

Recommendation 3: Industry should develop down-loadable clients that comply with the standard interface specification and make them available for users.

Access to emergency services via text terminals is an indispensable requirement. Emergency service providers are in process of enhancing their equipment to be capable to handle IP-based calls. Standardization of respective emergency call interfaces is ongoing. Text calls should be fully compatible with these standards. European emergency service providers cooperate on telecommunications issues in EGEA that is a CoCOM working group.

Recommendation 4: EGEA should take on its agenda IP based text service and work out an implementation strategy. Member States should commit to implementing access to emergency services based on a common set of standards.

Legacy text services will be inevitably phased out in a matter of few years. However, in the meantime users of these services should be able to communicate with IP based text service users and relay services. The standards and provision of legacy text services vary from country to country. Subsequently, there is no one-size-fits-all solution. Member States have to develop their own gateway implementation plans.

Recommendation 5: Member States should work out implementation plans for legacy text telephone gateways and carry out these plans.

It is expected that as soon as direct text services become common for all users the utilization of relay services will further decline. However, it is not likely that relay services die out so they may need to be upgraded to serve also IP text service users. To a large extent the organization of relay services varies by country, therefore it is not possible to have a common strategy across all EU Member States. However, the interfaces of relay services should comply with a common standard.

Recommendation 6: Member States should work out plans for enhancing relay services to be able to handle IP based text calls using a common interface specification and carry out these plans.

4. Timetable and organization

These six recommendations will require each their own time-table. In order to speed up the process it is preferable to select a spear-head strategy i.e. to engage those stakeholders who are willing to commit to a common standard and to its implementation. The target is that products and services compliant with the standard are available for users in selected countries by 2008. Already now IP based text services are available in relatively small scale. It is important that information on users' experience is made available as soon as possible in order to impact on user interface design. The involvement of Member States is important to solve legacy text-phone and relay service complications. Access to emergency services within year 2008 is likely very challenging objective and needs further consideration.

Given the multitude of stakeholders and complexity of the issues project approach looks most appropriate to achieve tangible results in the timeframe of the year 2008. This applies to both the overall coordination and national implementation.

Recommendation 7: The European Commission should set up a project in order to coordinate the activities of different stakeholders with a view to implementing real time text service based on a common standard in several Member States and get commitment from stakeholders to the project based approach.

EICTA MEMBERSHIP

About EICTA:

EICTA, founded in 1999 is the voice of the European digital technology industry, which includes large and small companies in the Information and Communications Technology and Consumer Electronics Industry sectors. It is composed of 57 major multinational companies and 39 national associations from 27 European countries. In all, EICTA represents more than 10,000 companies all over Europe with more than 2 million employees and over EUR 1,000 billion in revenues.

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Austria: FEEL; **Belgium:** AGORIA; **Bulgaria:** BAIT; **Czech Republic:** ASE, SPIS; **Denmark:** ITEK, IT-Branchen; **Estonia:** ITL; **Finland:** TIF; **France:** ALLIANCE TICS, SIMAVELEC; **Germany:** BITKOM, ZVEI; **Greece:** SEPE; **Hungary:** IVSZ; **Ireland:** ICT Ireland; **Italy:** ANIE, AITech-ASSINFORM; **Latvia:** LIKTA; **Lithuania:** INFOBALT; **Malta:** ITTS; **Netherlands:** ICT-Office, FIAR; **Norway:** ABELIA, IKT Norge; **Poland:** KIGEiT, PIIT; **Slovakia:** ITAS; **Slovenia:** GZS; **Spain:** AETIC, ASIMELEC; **Sweden:** IT Företagen; **Switzerland:** SWICO, SWISSMEM; **Turkey:** ECID, TESID, TÜBISAD; **Ukraine:** IT Ukraine; **United Kingdom:** INTELLECT.