

EAAC TTY Transition

Report from the
EAAC

1 March 2013

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TTY - The current situation

- The TTY enables a limited functionality for intermixed voice and real-time text, integrated in the telephone network.
 - Slower than rapid typing, limited character set, only alternating text and audio, one direction text at a time, no popular wireless solution
- Some important features are not yet provided by any other widespread solution in USA. (voice and text-as-you-type)
- Estimation 100 000 users in USA, reducing to half over 7 years.
 - 20 000 9-1-1 calls per year by TTY
 - 18 M calls per year user – user and relay
- Communication problems in VoIP networks

Requirements on a TTY replacement

- Rapid text communication while typing
- Simultaneous voice
- Full character set.
- Wireless and fixed
- Robust transmission
- Use existing standards for rapid deployment
- Use for: user-user, relay, NG9-1-1, legacy 9-1-1
- Possible popularity by mainstream users
- TTY interoperability possible through gateways

Proposed TTY replacement base technology

Selected technology depend on call control environment

- Native SIP (often used for VoIP)
 - T.140 / RFC 4103 RTP based real-time text
 - Common audio codecs, e.g. G.711
- Wireless and IMS , RCS, LTE and VOLTE
 - IMS Multimedia Telephony. GSMA PRD.IR.92 +App. B.
 - (using the same real-time text standard as for native SIP)
- Already specified for NG9-1-1 access in RFC 6443 and NENA i3 technical specification and tested in NENA ICE5 interop event.

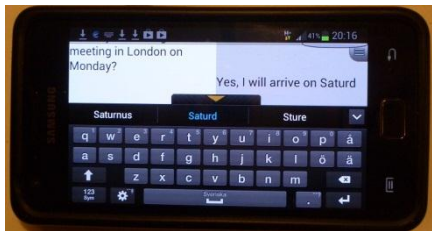
Implementation in other technologies than SIP and IMS

- Providers in other call control environments may use any real-time text transport specification available for the environment.
- They need to convert to SIP and RFC 4103 and audio in order to provide NG9-1-1 access and interoperability.
- Examples of environments that may solve this by own real-time text specifications and conversion
 - XMPP
 - WebRTC

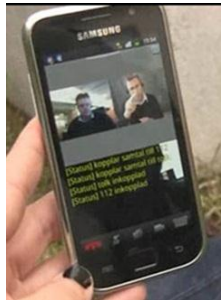
Work on TTY transition report since December 2012

- Discussions available to whole EAAC
- Added Chapter 4. User needs, with information based on survey results. Shows scaring need for improvements.
- Added Section 9.5 Access to legacy 9-1-1 and transition from legacy to NG9-1-1. Urgent aspect. Usability of current 9-1-1 TTYs for this purpose needs to be verified.
- Extended chapter 12 on regulation with wireless section.
 - Discussion if analysis of regulation would be included. Decided to not include.
- Improved recommendations in chapt. 13.
 - Discussion, especially on wireless. Reached consensus.
- Reviewed report and reached consensus.

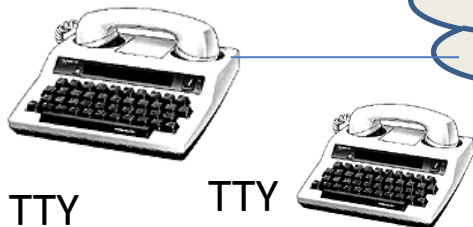
Vision of accessible communication



TTY replacement

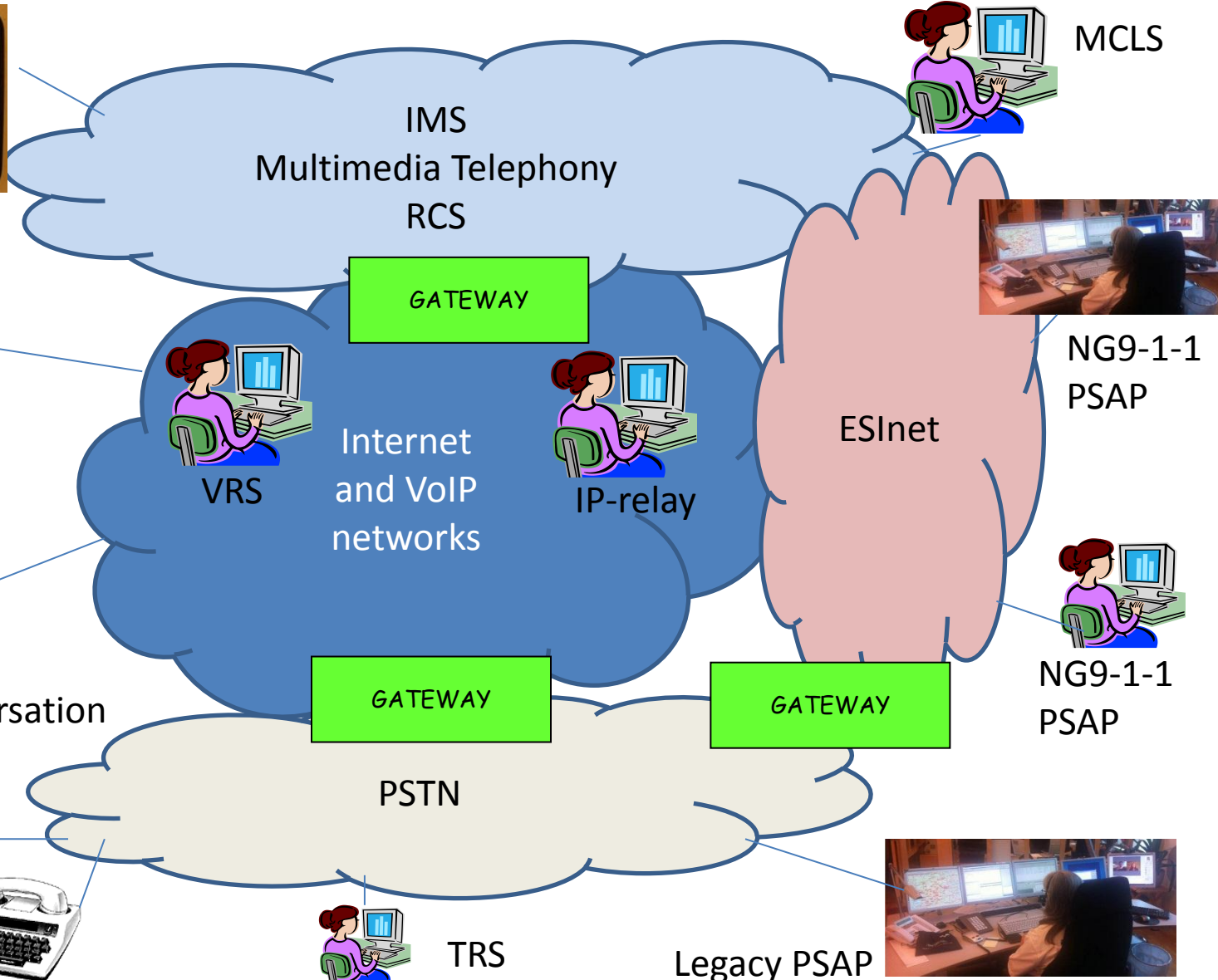


Total Conversation



TTY

TTY



MCLS



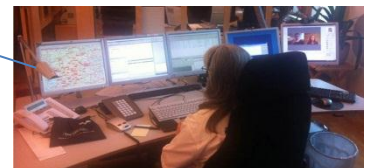
NG9-1-1 PSAP



NG9-1-1 PSAP



TRS



Legacy PSAP

Remaining issues

- **9.5 Access to legacy 9-1-1 and transition from legacy to NG9-1-1.** Three models presented. Possible to build on same gateway structure as Interim text-to-9-1-1. Is it feasible to use TTY:s in legacy PSAPs? TTY has so limited functionality. *Handle in i3 gap work.*
- **9.6.1 The way to make gateways between TTY and TTY replacement deployed and available.** Five alternatives presented. *Further analyzis needed.*
- **9.8 Interoperability between providers of TTY replacement.** Wording questioned after original consensus. *Efforts to agree may continue up to March 1st.*

TTY transition

Report available at:

<http://eaac-recommendations.wikispaces.com/TTY+Transition>

Proposed to be approved by EAAC for publication.

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