**Slide 1**
**Total Conversation through ITU-T & IETF Standards:**
**Sign, Type, and Speak – You Decide**
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**Slide 2**
**It's All About**
**"Total Conversation"**
**•The ITU-T and IETF are working on standards that bring about the convergence of**
**•Voice telephony**
**•Video telephony**
**•Text telephony**
**•These standards aim to enable what it calls "Total Conversation"**

**Slide 3**
**Defining the Multimedia Service**
**•The ITU-T defined a series of service specifications and included text and video as components of the multimedia services (F.700 and F.703)**
**•Several multimedia protocols evolved, including:**
**•H.323 – Multimedia communication over packet-switched networks (ITU-T)**
**•SIP – Session Initiation Protocol (IETF)**
**•H.320 - Multimedia communication over ISDN (ITU-T)**
**•H.324 – Multimedia communication over low bit-rate links (phone lines and mobile phones) (ITU-T, 3GPP)**
**•Multimedia systems largely focused only on voice and video**

**Slide 4**
**Standards focused on Disabilities**
**•H Series Supplement 1 – Raised awareness about sign language and lip reading as it relates to video quality**
**•Standards to allow text conversation:**
**•ITU-T T.140 defines a representation of text suitable for transmission over IP networks and able to support all languages in the world**
**•IETF RFC 2793 defines how to transport T.140 over IP**
**•H.323 and SIP can utilize RFC 2793 to transmit text**

**Slide 5**
**ToIP Objectives**
**("Text over IP")**
**•Focused on bridging two PSTN networks via IP**
**•Allow for character-by-character text communication**
**•Allow for simultaneous two-way conversation, along with voice and video (inherent limitations of the PSTN an obstacle)**

•Standardize on an international character set (Unicode)
•Support all standard TTY device types defined in ITU-T V.18
•Enable different device types to communicate through each other by using the gateways as "interworking" devices (see next slide)
•Enable legacy, PSTN devices to communicate with newer, IP-based systems
ToIP Site: http://www.packetizer.com/iptel/toip/

**Slide 6**
Graphic: IP Network "cloud" titled RFC2793. Three components are attached to IP "cloud": 1) Gateway SMS/IM to RFC2793; 2) PSTN Gateway; and 3) PSTN Gateway. From the Gateway, connection to PC for instant messaging. Wireless connection to cellphone with SMS. From one PSTN Gateway, there is a PSTN v.21 link to the United Kingdom V.21 TTY device. From the other PSTN Gateway, there is a PSTN-Baudot link to U.S. Baudot TTY device. The IP Network also connects to an IP End Point (phones, voicemail, and IVR), and to PC (IP softphone)
RFC-2793 Enables Global TTY Communications
  • **Today, TTY devices are islands and cannot communicate with other text devices or other TTY protocol around the world**
  • **A new standard enables global TTY communications (e.g. V.21 to Baudot)**
      • **RFC-2793 enables transport of real-time text over VoIP**
      • **V.151 defines how to use RFC 2793 between PSTN gateways, allowing interconnection of dissimilar TTY types (expected ratification late 2004 / early 2005)**
  • **RFC-2793 enables text communication revolution**
      • **Integration with IP End Points (e.g. IP Phones, Voicemail, Softphone, etc.)**
      • **Integration with Instant Messaging (70M users)**
      • **Integration with wireless Short Messaging Systems (75M US users – IDC 2003, 1.3B world-wide users – Radicati)**

**Slide 7**
Graphic: Video Relay Service computer screen, cell phone with video, video phone, and text telephone.
Ultimate Goal – Total Conversation
•To allow any device to support the transmission of video and/or text signals
•To allow a user on a PC connected to an IP network to chat with a user on a legacy PSTN TTY device
•To improve communications with the widespread adoption of video
•To allow a user with a wireless PDA to communicate with anybody in the world
•To *not require* special tools for communications

**Slide 8**
**Conclusion**
Enable Video, Text, and Voice Communications. So you can Sign, Type, or Speak. You Decide.