Speaker Biometrics and VoiceXML 3.0

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VoiceXML Forum Speaker Biometrics Committee

• **Address technical issues**
  – Security, performance, use cases/scenarios/UI design, application architecture

• **Requirements analysis**
  – Establish requirements to support the addition of SIV to VoiceXML 3.0

• **Unify disparate voice biometrics standards and projects**
  – Form liaison relationships with other biometrics industry and standards groups and governmental agencies

• **Education**
  – Application areas of voice biometrics
  – VUI design issues and recommendations

• **Provide technical input to other related standards activities**
  – W3C VoiceXML 3.0, ANSI/INCITS/VoiceXML Forum CBEFF, etc.

• **Global participation**
  – Team works via weekly teleconferences and email
Collaboration with other standards activities

- Ensure conformance with existing standards
- Form liaison relationships with relevant standards bodies
- Develop joint standards where appropriate

VoiceXML Forum area of focus

Actively support standards bodies and industry consortia, such as the World Wide Web Consortium (W3C) and the Internet Engineering Task Force (IETF) of the Internet Architecture Board, as they work on VoiceXML and related standards
SIV Standards Activities

- SIV extensions for VoiceXML
  - Based on requirements from VoiceXML Forum

- SIV network protocol: MRCP v2
  - IETF developed protocol
  - VoiceXML Forum developing test suite

- CBEFF-based SIV transaction data format

- Architecture and Security model
SIV Requirements for VoiceXML

• Establish requirements to support SIV in VoiceXML v 3
• Requirements document published
• Process
  – Submitted to W3C VBWG in Sept., 2005
  – Approved by VBWG in Oct., 2005 – VBWG SIV committee
  – Updated requirements based on comments – ongoing
• Content
  – Scope of the work (e.g., security, biometrics in general)
  – Relationship with other standards
    • MRCP, BioAPI, CBEFF, XCBF, etc.
  – Technical requirements
  – Use cases
Collaboration with INCITS M1

• Purpose

*In many biometric transaction architectures more than organization needs to have results and data from the transactions. There needs to be a standard and secure way to communicate that information and data for validation and risk assessment— even if the communicating organizations use different speaker recognition products. CBEFF is a template for creating such data-exchange file formats*

• Process and Status

– Formal proposal for project and mutual liaison relationships approved by M1 / INCITS and VoiceXML Forum Board of Directors (Dec 2005)
– Several drafts published (Feb 2006, May 2006)
– Joint draft to be published Dec 2006
SBC / INCITS M1 Collaboration Project

- Develop CBEFF-compliant file format for voice
  - Standard Biometric CBEFF Header
  - Biometric Data Block (BDB)
  - Optional Security Block

**BDB:**

<table>
<thead>
<tr>
<th>BDB Header</th>
<th>Sample 1</th>
<th>...</th>
<th>Sample N</th>
</tr>
</thead>
</table>

**Header field ideas:**

<table>
<thead>
<tr>
<th>No. of samples</th>
<th>Features vs. Data</th>
<th>Input device</th>
<th>Sampling frequency</th>
<th>ASR (Y/N)</th>
</tr>
</thead>
</table>
Voice Web Architecture, Components and Security Implications

Concerns:
- Voiceprint storage, access and update
- Various options for deployment architecture
- Security and performance
SBC: Participation from across the industry

- Engine vendors
- Platform vendors
- Service providers
- Application developers
- Consultants

Authentify, Daon Corporation, Diaphonics, iBiometrics, IBM, Intel, Loquendo, T-Systems, Nuance Communications, Persay, Tellme Networks, more
SBC Status

• Documentation:
  – Published 2nd draft of *SIV Requirements for VoiceXML Applications*
  – Published 2nd draft of *SIV Introduction and Best Practices*
  – Published 2nd draft of *SIV Applications*
  – Published 2nd draft of *Data Exchange File Format for SIV*
  – Publish 1st draft of Security/VUI Design Guidelines (Q4 2006)

• Collaboration / Evangelism with other standards groups
  – Ongoing work with INCITS M1 (Dec. 2006)
  – Speaking at relevant events
  – Continue to write articles for relevant publications
VoiceXML Forum
Speaker Biometrics Committee

http://www.voicexml.org/resources/biometrics.html

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