Justice System VUI Designs
A Comparative Analysis Based on User Types

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Justice System
Business Requirements

**Officer**
- Speaker Biometrics Verification
- Enrollment of Speaker Biometrics for Officers/Offenders
- Fallback PIN
- Leave Voice Mail Message(s)
- Retrieve Voice Mail Message(s)
- Inquiry/Update (of Offenders) - Address
  - Employment
  - Income
  - Aliases/Identifiers
  - Telephone
  - Schedule
  - Emergency Contact
  - Drug Test
  - ........

**Offender**
- Speaker Biometrics Verification
- Report-In/Check-In
- Leave Voice Mail Message(s)
- Retrieve Voice Mail Message(s)
- Inquiry - Telephone
  - Drug Test
  - Schedule
  - ........
- Inquiry/Update - Address
  - Emergency Contact
  - ........
Justice System
VUI Design Strategies

Officer
- Authentication
  - Speaker Biometrics Verification
  - Fallback PIN (Failed Verification)
- Enrollment
  - Officers/Offenders Physically
  - Speaker Biometrics for Challenge/Response Verification
- Main Menu
  - Global Menu
  - Dynamic Menu
  - Landmarks
  - Time out, max help and mis-reco.
    - Back to Main Menu
    - Terminate Call
  - Error Handling – Severity of Error
    - Back to Main Menu
    - Terminate Call
- Frequent Callers
  - Expert – Short Prompts, barge-in
    - .......
  - Novice – Detailed Prompts

Offender
- Authentication
  - Speaker Biometrics Verification
  - Reverse ANI lookup
  - Record Message (Failed Verification)
- Enrollment
  - Can’t enroll anyone
  - Must be enrolled by an authorized person
- Report-In/Check-In
- Main Menu / Navigation
  - Global Menu
  - Dynamic Menu
  - Landmarks
  - Time out, max help and mis-reco.
    - Back to Main Menu
    - Terminate Call
  - Error Handling – Severity of Error
    - Back to Main Menu
    - Terminate Call
- Less Frequent Callers
  - Novice – Detailed Prompts
  - .......
  - Expert – Short Prompts, barge-in
Offender’s Call Flow

**Reverse ANI lookup**

**SYSTEM**
Welcome to The Corrections System: Please say or key in your ID number.

**OFFENDER**
5 5 5 3 7

**Confirmation**

**SYSTEM**
I got 5 5 5 3 7 Is that right?

**Challenge/Response**

**OFFENDER**
8 3 5 2 8 3 5 2

**Randomly Generated Four Numbers Phrase**

**SYSTEM**
Offender Verification: Please say 8 3 5 2 8 3 5 2

**OFFENDER**
Yes

**Speaker Biometrics Verification**

**SYSTEM**
Thank you, John Doe. You have successfully checked in. Your next check-in is on August 22 at 7 pm.

**Dynamic and Global Main Menu**

**SYSTEM**
To hear that again say “repeat” or “main menu” for other choices

**OFFENDER**
Main menu

**Landmark**

**SYSTEM**
Schedule: You are scheduled for a drug test on August... .

**OFFENDER**
Schedule

**Landmark**

**SYSTEM**
Main menu: You can say “address”, “officer phone”, “schedule”, . . .
Justice System Technologies Assignment

**Officer**
- Speaker Biometrics Verification
- Speech Recognition
- Dynamic VXML/Grammar
- Web Services
  - Global Justice XML Data Model
- Data Storage
  - RDBMS for Speaker Biometrics, Fallback PIN etc.

**Offender**
- Speaker Biometrics Verification
- Speech Recognition
- Dynamic VXML/Grammar
- Web Services
  - Global Justice XML Data Model
- Data Storage
  - Recorded Messages (on Failed Verification)
- ReverseANI lookup
Justice System
Validation/Testing Requirements

**Officer**
- Speaker Biometrics Verification Score
- Fallback PIN
- Speech Recognition (Input and Output)
- Web Services Parameters
- Data Storage Transactions
  - Fallback PIN
  - .......

**Offender**
- Speaker Biometrics Verification Score
- Reverse ANI Lookup
- Speech Recognition (Input and Output)
- Web Services Parameters
- Data Storage Transactions
  - Recorded messages
  - .......

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**Justice System**
Real Life Testing/Tuning

**Officer**
Testing the application’s VUI in conditions that are consistent with their intended use.
- Wizard of OZ
- Device Type (Cell phone, speaker phone, landline phone)
- Enrollment of Officers/Offenders Physically
- Speaker Biometrics for Challenge/Response Verification
- Speaker Biometrics Verification Score
- Grammar
- Prompts
- .......

**Offender**
Testing the application’s VUI in conditions that are consistent with their intended use.
- Wizard of OZ
- Device Type (landline phone)
- Speaker Biometrics for Challenge/Response Verification
- Speaker Biometrics Verification Score
- Recorded Message(s)
- Grammar
- Prompts
- .......
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Thank You