VoiceKey.IVR

A Reliable and Cost-Effective Solution for Voice Verification using IVR

Prophecy Integration Overview

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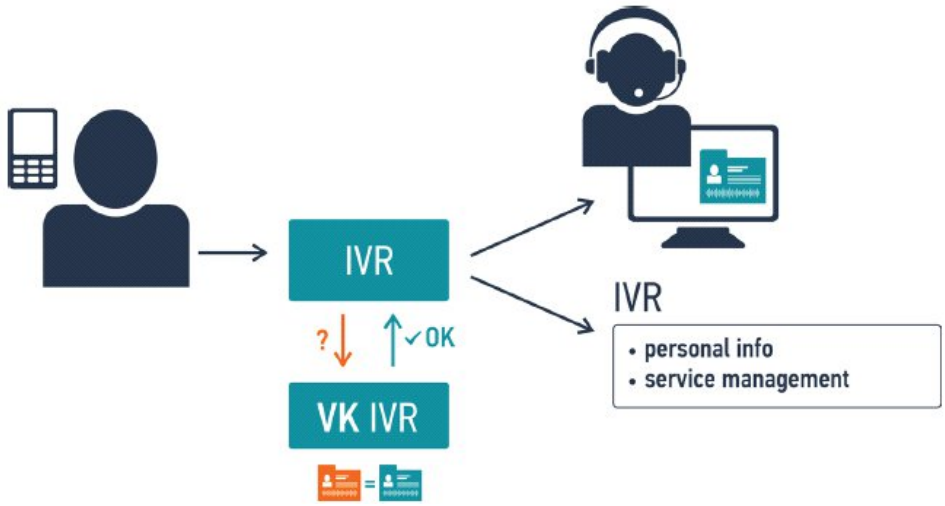
VoiceKey.IVR Overview

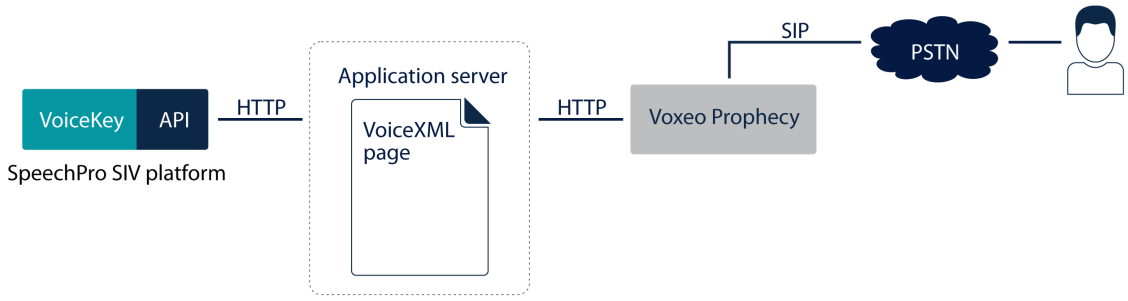
VoiceKey.IVR turns user verification in IVR environment into a quick, secure and user-friendly process. For each call IVR-system automatically prompts a caller to say a simple passphrase in order to analyze unique biometric features of the voice and compare it with a voice biometric model associated with this account in the Data Base. Voice verification provides a quick and reliable result as every human voice is unique.



Technical highlights

- Minimum length of the passphrase - 2.5 sec
- Size of the voiceprint – from 3 KB
- Voice analysis by 60 biometric parameters
- High quality in real life environment (signal-to-noise ratio from 7 dB, reverberation up to 500 ms)

VoiceKey.IVR Integration with Voxeo Prophecy



Below is a brief description of integration. Extended description can be found in *Developer's Guide*.

The protocol

Communication between server (VoiceKey) and client (Application) is based on HTTP POST. Following HTTP headers should be specified:

```
Content-Type=application/x-voicecomparison
Content-Version=2
```

Request data consists of the strings that end with "r/n" contain a key-value pair in following format:

```
<type><key> <size> <value>
```

Integration demo is based on the following scenarios:

1) *Enrollment*. Three recording of static passphrase are submitted to VoiceKey for making three voice models.
2) *Verification*. One recording of static passphrase and three voice models are submitted to VoiceKey for getting the verification score.

Enrollment

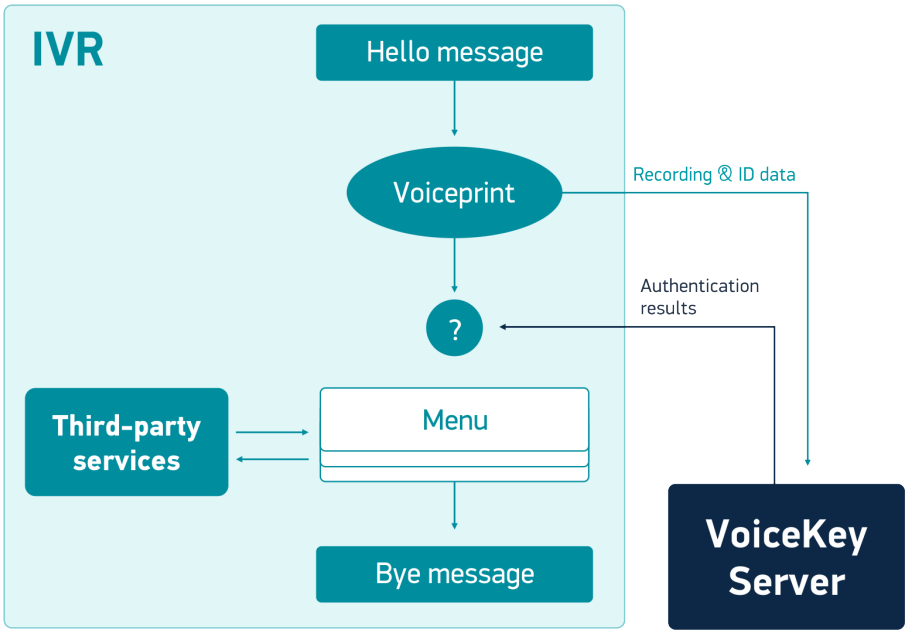
1. User is identified by Caller ID or by another method.
2. VoiceXML tag <record> or utterance recording is used to record 3 samples of the static passphrase.
3. The samples are submitted to servlet that will make VoiceKey server request.
4. Example of VoiceKey request data:

```
scommand vv_createStaticModel
bwav WAV1_SIZE WAV1_DATA
bwav WAV2_SIZE WAV2_DATA
bwav WAV3_SIZE WAV3_DATA
```

5. VoiceKey server reply data (in case of no errors):
```
bmodel MODEL1_SIZE MODEL1_DATA
bmodel MODEL2_SIZE MODEL2_DATA
bmodel MODEL3_SIZE MODEL3_DATA
sresult Success
```
6. VoiceKey doesn't store user accounts and voice models. They are linked and stored in the customer DB.

Verification

1. User is identified by Caller ID or by another method. Corresponding 3 voice models are retrieved from the customer DB.
2. VoiceXML tag <record> or utterance recording is used to record the passphrase sample.
3. The sample and 3 models are submitted to servlet that will make VoiceKey server request.
4. Example of VoiceKey request data:
```
scommand vv_compareDinamicModels
bmodel MODEL1_SIZE MODEL1_DATA
bmodel MODEL2_SIZE MODEL2_DATA
bmodel MODEL3_SIZE MODEL3_DATA
bwav WAV1_SIZE WAV1_DATA
```
5. VoiceKey server reply (in case of no errors):
```
sresult Success
sp 91
```
6. 91 (%) means the matching rate between the recorded passphrase and the verification voice. Decision about the success of verification can be based on a threshold (recommended value: 60%).



Description of the Demo

The demo server is designed to test voice identity confirmation technology based on verification via a static passphrase. The demo is integrated with Voxeo Prophecy.

There are two use cases have been implemented in the demo:

- Enrollment
- Verification/confirmation (comparing user voice with the sample)

The demo uses a predefined passphrase "With Speechpro Bank I don’t need a password"

How to register?

1. Call +1 (800) 374-19-05
2. Say the passphrase 3 times.
3. The system confirms the enrollment and saves the caller ID associated with the voice template

How to get verified?

1. Call again +1 (800) 374-19-05. Now your caller ID is registered in the system. You will be prompted to say your passphrase.
2. Say the passphrase 1 time.
3. The system replies with the verification result