Asahi - High level design and data flow
Genkey Collector
Research and development team – Americas LDT

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Document Control

Version History

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Reviewer List and History

Version	Name and Role	Confirmation	Review Date
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Approval and Sign Off

Version	Name and Role	Approval Type	Approval Date

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1. Overview and background

'Genkey Collector' is the name used to identify a Genpact internally developed software. The purpose of the application is to support operations to receive / transmit sensitive information such as credit card number or social security number during a call. The software works by capturing the DTMF tones of the current call happening through the softphone installed on the user's computer, the data can be transferred directly to the client system. In this way the sensitive data is not received directly

2. Architecture

The software is built using .NET Core 3.1 and works as an offline desktop application.

Open source and external elements

The following elements were used to build the software or are required by the software to function:

- NAudio – DTMF: Required to detect the tones from audio streams.
  - https://www.nuget.org/packages/DtmfDetection.NAudio
- VB Cable: This software creates virtual audio devices on the user computer. It creates a pair of virtual output and input where the audio played through the output is streamed to the correspondent audio input.
  - https://vb-audio.com/Cable/

3. Solution details

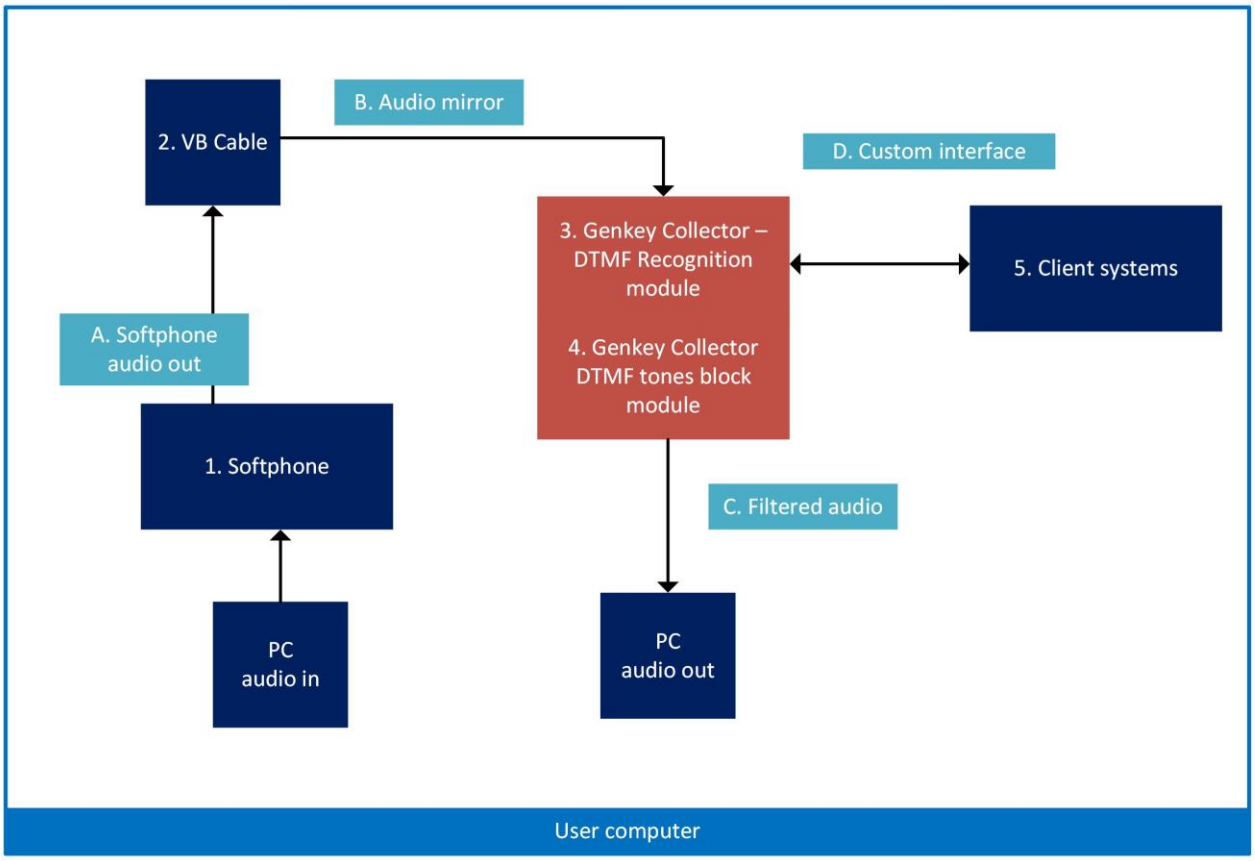

Figure 1 Interactions diagram

Process

1. Call is received or made using the **softphone** software in the computer. The audio output of the call is directed to the input of the virtual audio cable *(Figure 1 – 2).*

2. The virtual audio cable **redirects audio** to the 'Genkey Collector Software'

3. Genpact associate request the user to **enter the sensitive numeric information using the numeric keypad** on their phone.

4. 'Genkey Collector' DTMF tones recognition **module captures** the information received (Figure 1 – 3). This information is stored temporal encrypted file with asymmetric encryption. The information is stored in an encrypted format to avoid having it exposed as plan text on memory for extended time. At user command the information can be decrypted temporarily to be **transferred to client system** using the preferred method and security protocol of that system. *(Figure 1 –D)*

5. 'Genkey Collector tones block module' **removes the pieces of audio containing DTMF tones** *(Figure 1 – 4)* and only sends the rest of the audio to the output of the computer to avoid the user hearing the tones.

6. User receives feedback on 'Genkey collector' UI that the operation has been completed.

7. User selects option in interface to move to next call/transaction. The **sensitive data is cleaned from memory** in preparation to take new data. The reference of the variable storing the encrypted information is set to null prior taking new data in next transaction.