Icing

An Epitech Innovation Project

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Introduction to Icing

Icing is the name of our project, which is divided in **two interconnected goals**:

1. Provide an end-to-end (E2E) encryption **code library**, based on Eliptic Curve Cryptography (ECC), to encrypt phone-calls on an **analog audio** level.

2. Provide a reference implementation in the form of a totally seamless Android **smartphone dialer** application, that anybody could use without being aware of its encryption feature.

This idea came naturally to our minds, when we remarked the lack of such tool.

Where "private messaging" and other "encrypted communication" apps flourish, nowadays, they **all** require an internet access to work.

Privacy and security in telecoms should not depend on internet availability.

Icing's strategy

We focus on FOSS community as a primary target.

Our reference implementation, the Iced dialer, is destined to replace any stock dialer app from any android smartphone.

Alternative open-source and privacy-focused Android distributions, such as GrapheneOS, are major targets.

Their community are thriving, and could help our open-source development.

Technology choices

We chose to code with Flutter, the Dart framework.

Even though this choice gives us quick-delivery capabilities, we will need to switch language for lower levels development, such as sound stream caption, encryption, compression, encoding, and transmission.

The language for these manoeuvres is not determined yet, but Go, Rust, Kotlin and Java are good candidates.