A look into the Mobile Messaging Black Box

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Introduction

Messaging - An Analogy

- · You're at a party
- Friend approaches you and needs to tell you something in private
- · What do you expect when you say private?
- You enter a separate room, you trust the location
- · What does a separate room offer you?
 - Authenticity
 - Integrity
 - Forward Secrecy
 - Future Secrecy
 - · Plausible Deniability

Case Study - Signal

Reverse-Engineering Threema



Threema Packet Format

Message Packet (Threema Protocol Layer)



Threema: Special Messages

- Polls
- · Images with Caption
 - · Case of caption leak found
- · Audio Messages
 - · Leak Android version
 - Possible stagefright vector

Threema Image Messages

Image Message



Threema Audio Messages

Audio Message

