Content Moderation on End-to-End Encrypted Systems

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E2EE MESSAGING

CONTENT MODERATION

ROUND 812

Message Franking
Forward Tracing
Homomorphic Encryption

E2EE Messaging

Content Moderation

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Content moderation technologies for E2EE

- Message franking
- Forward tracing
- Client-side scanning
- Sever-side scanning

Communications Privacy Laws

- Wiretap Act (WA)
- Stored Communications Act (SCA)
- Pen Register Act (PRA)
- Communications Assistance for Law Enforcement Act (CALEA)
- Computer Fraud and Abuse Act (CFAA)

In the paper

	Wiretap Act	SCA	PRA	CALEA	CFAA
Message Franking					
Forward Tracing					
Client-Side Scanning					
Server-Side Scanning					

In this talk

	Wiretap Act
Message Franking	

Zooming In

Wiretap Act

- "any person who …intentionally intercepts … any … electronic communication … shall be punished." 18 U.S.C. § 2511(1)(a)
- "'intercept' means … acquisition of the contents of any … electronic … communication through the use of any … device." *Id.* § 2510(4)
- "'contents' … includes any information concerning the substance, purport, or meaning of that communication." *Id.* § 2510(8)

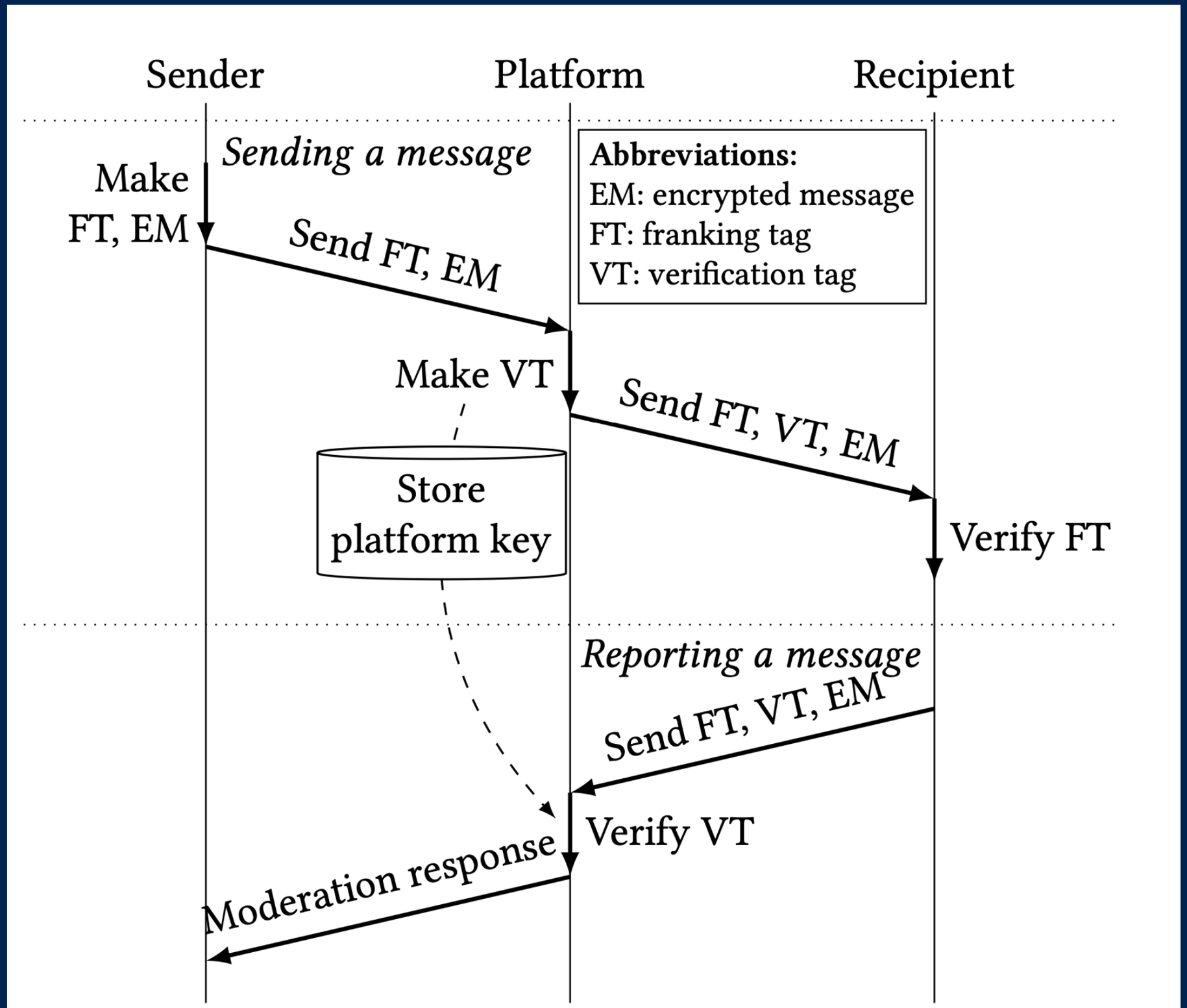
Wiretap Act elements

1. intentional
2. interception
3. of the contents
4. of an electronic communication
5. using a device

Wiretap Act exceptions

- "where such person is a party to the communication" 18 U.S.C. § 2511(2)(d)
- "where one of the parties to the communication has given prior consent." *Id*.
- "by a provider … in the ordinary course of its business." *Id*. § 2510(5)(a)(ii)
- "any activity which is a necessary incident to the rendition of … service." *Id*. § 2511(2)(a)

Message franking



Legal issues

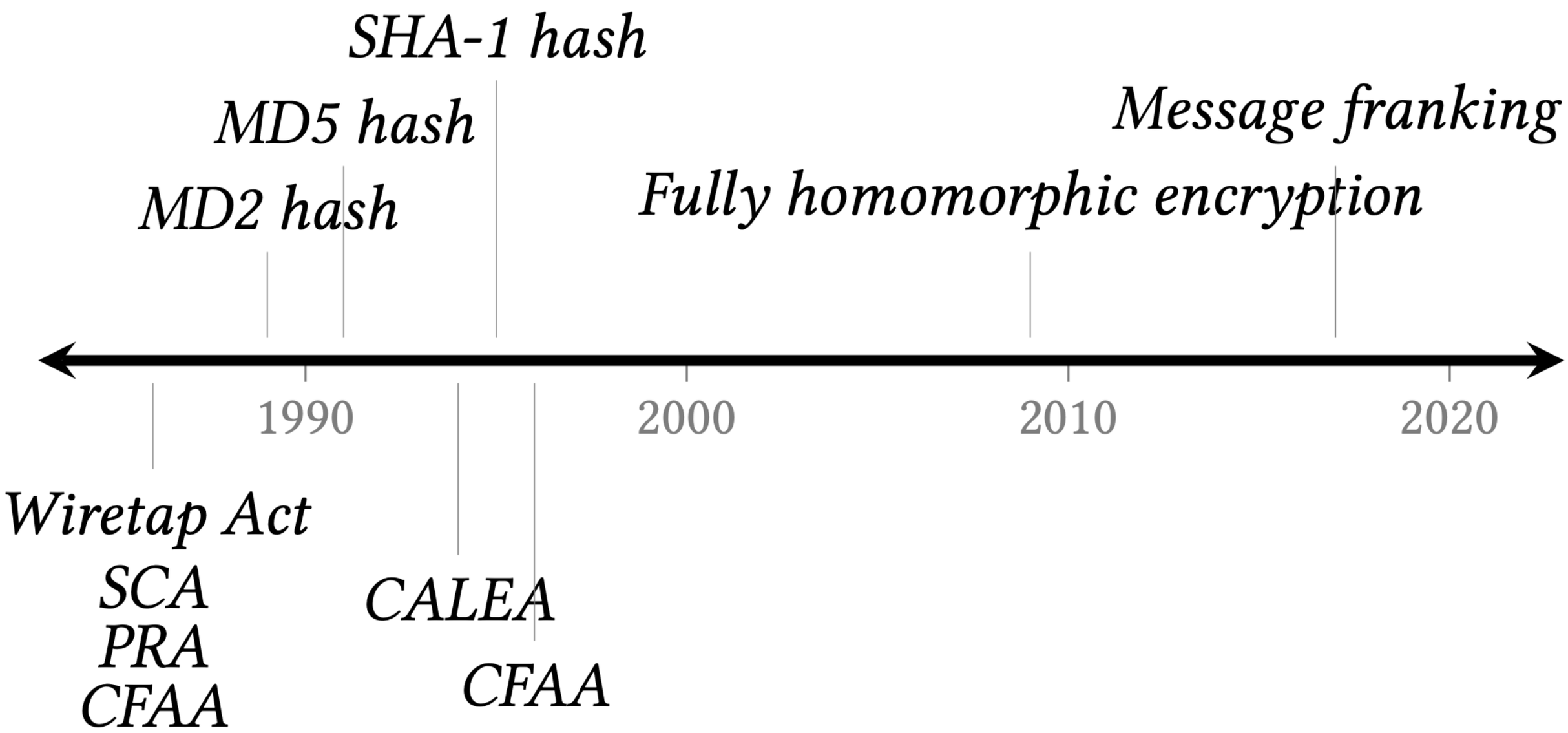
- Is a cryptographic hash “contents”?
- Do the users “consent” to the franking protocol?
- Is the platform a “party” to the communication?
- Is message franking “in the ordinary course” of the platform’s business?

So is it legal?

- Message franking is *probably* legal …
  - … but not *definitely* legal
- This seems like the kind of question that ought to have an unambiguous answer

Zooming Out

Timeline


SHA-1 hash
MD5 hash
MD2 hash
Message franking
Fully homomorphic encryption
1990
2000
2010
2020
Wiretap Act
SCA
PRA
CFAA
CALEA
CFAA

Broader lessons

- There are about a dozen boxes in our table that are equally complex and interesting
- Communications privacy law needs an update
- So what should we fix?

Inartful variation: contents vs. metadata

- WA: “contents”
- SCA: “contents” vs. “records of session times and duration”
- PRA: “contents” vs. “dialing, routing, addressing, or signaling information”
- CALEA: “contents” vs. “call- identifying information”
- CFAA: “information”

Common questions

- What kinds of information are protected?
- What kinds of devices are covered?
- What counts as valid consent?
- What is a valid business purpose?
- *What is "end-to-end encryption"?*

Discussion