Attacking the Verification Code Mechanism in the Norwegian Internet Voting System

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17.07.2013

Supported by the Swiss National Science Foundation
(project No. 200021L_140650)

Outline

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- $\rightarrow$ provides vote integrity: *cast and recorded as intended*

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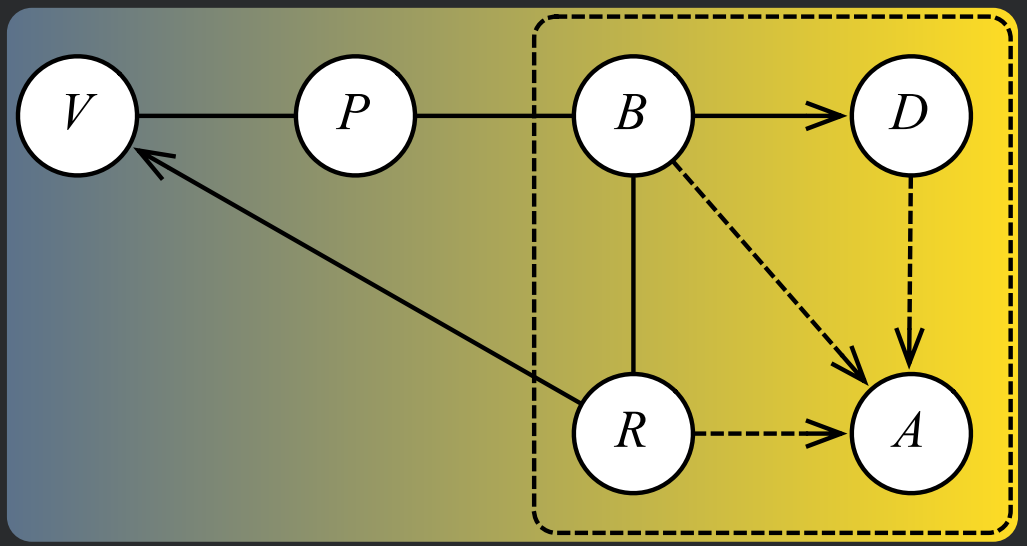

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Speciality

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Out-of-Band Post-Channel

The Norwegian E-Voting System...

...uses SMS-channel

Enhanced Adversary model

Man in the...

...*Browser & SMS-Channel*

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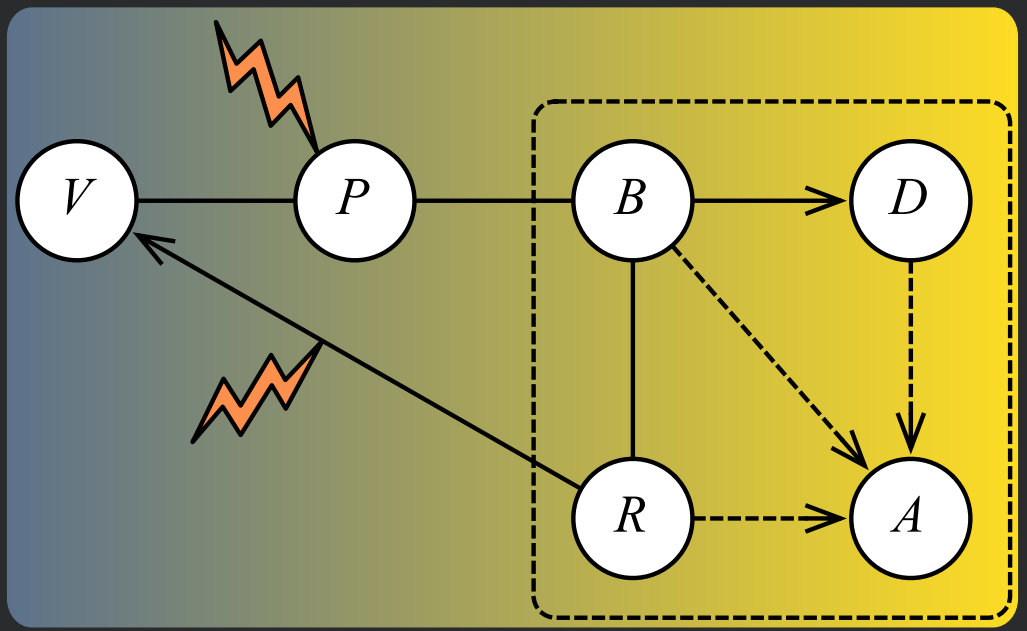
SMS-Channel: No more Out-of-Band

MIT(B + S) + Vote-Updating $\mapsto$ Compromized System



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Dedicated Hardware

Logic

- MITB informs IMSI-catcher to withold every second SMS: receipt generator $\mapsto$ voter's phone

$\rightarrow$ *Silent Vote Update*

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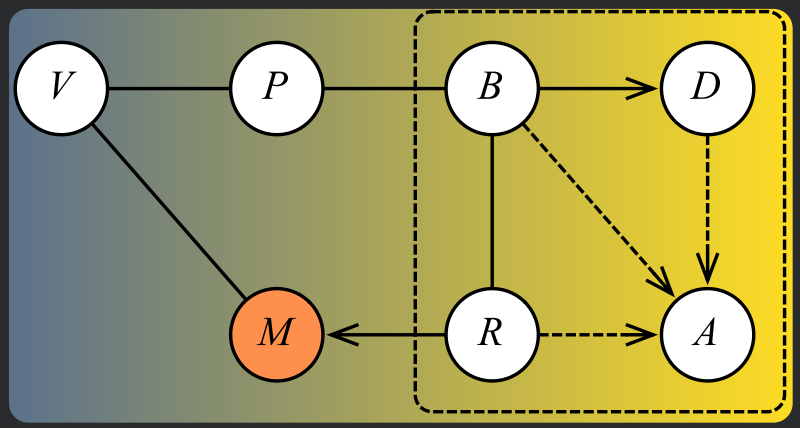
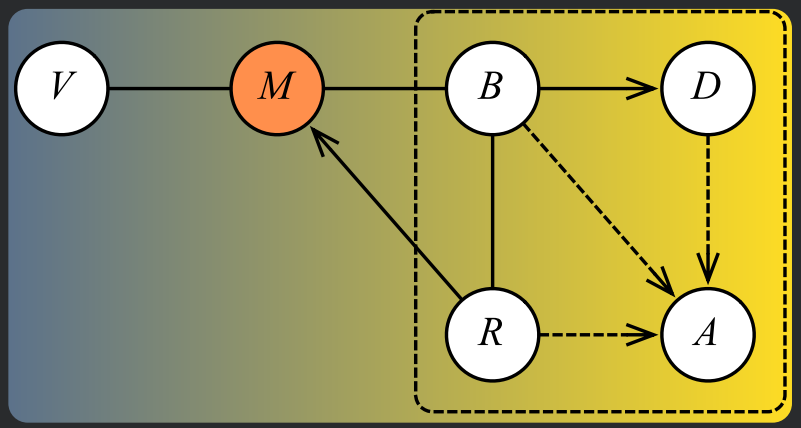
Introduction of Smart-Phone Technology to the Norwegian System





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Malicious Browser & SMS-App Software

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Web-Buddy & SMS-Buddy: Demonstrated live @ SIC [1] 2013

- Hardware: OS (Yocto's device)
- Software: UI (Open Source)

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'Silent-Channel' communication

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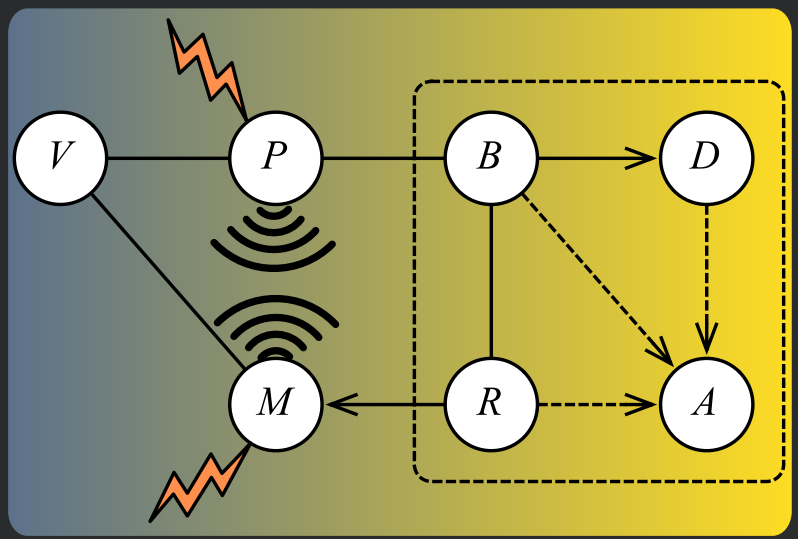

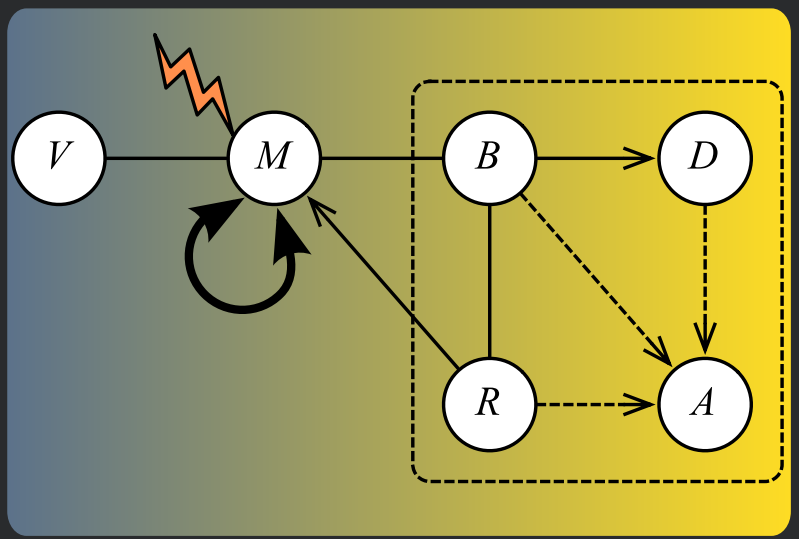

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SMS-Receiver A must, if MinID alike infrastructure shall remain.
However, Fake GSM-Attack still possible.

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