

Singularization as an MTD enabler to operate 'On Demand Security' services

International Workshop on Applications of Moving Target Defense

AMTD 2025

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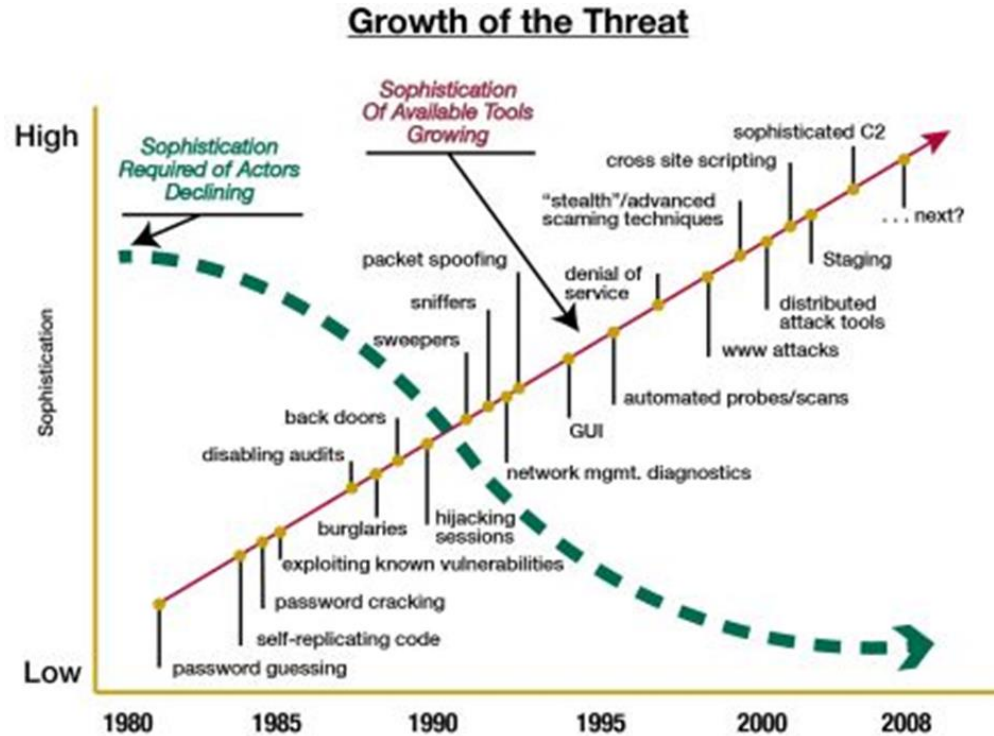
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a little archaeology (1)

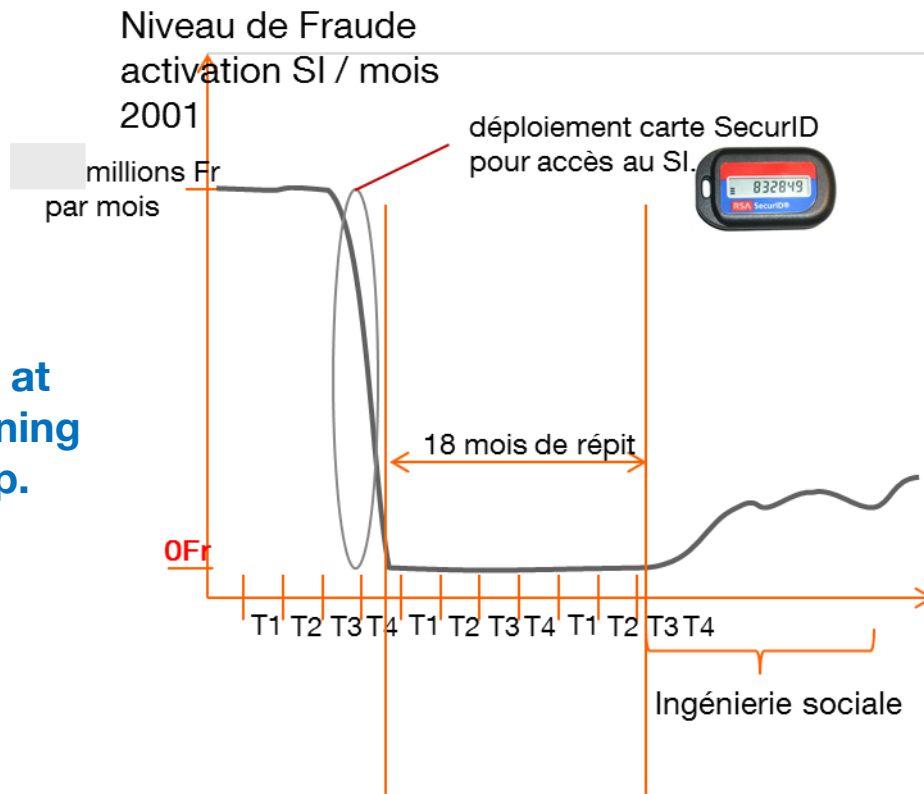
2013 : the platforms
homogenization (Android, IOS,
Web, etc.) linked to the
industrialization of attack methods
leads to a trivialization of hacking
practices (experts become script
kiddies)



(source : <http://sdm-blog.mit.edu/2013/10/security-threats-in-integrated-circuits.html>)

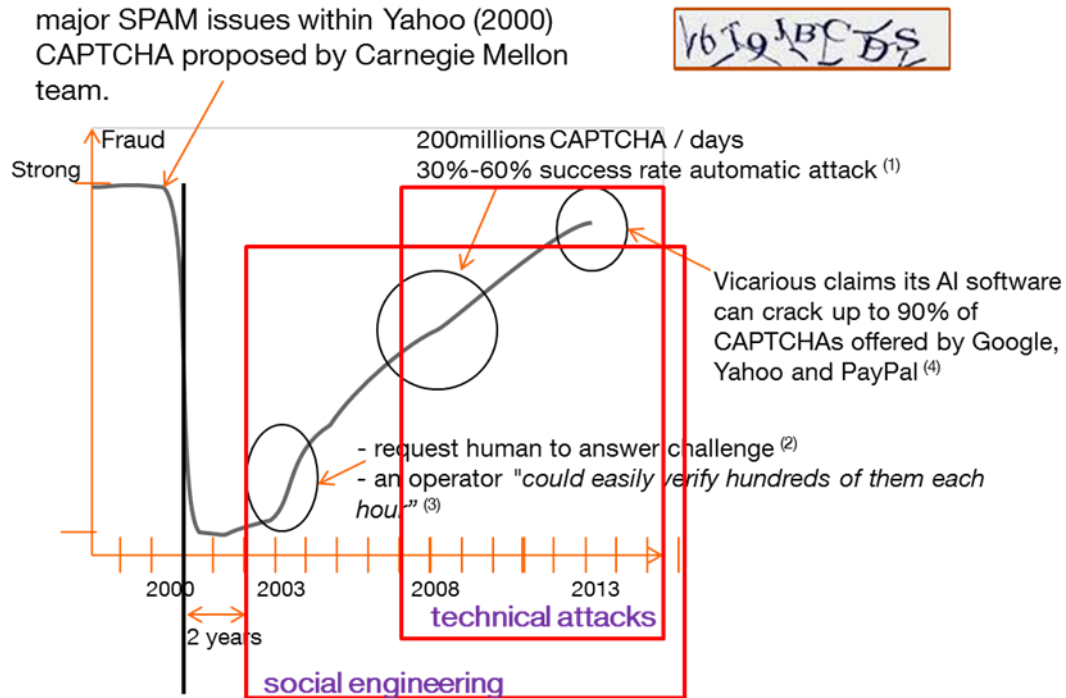
a little archaeology (2)

Deployment of SecurID Card™ at some MNO to prevent provisioning / activation fraud in phone shop.



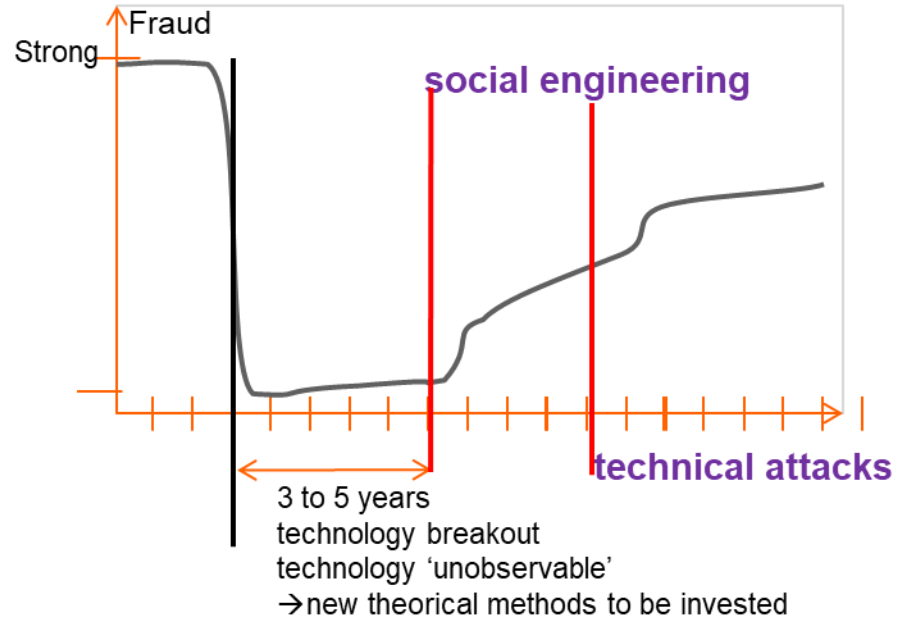
a little archaeology (3)

Similar fraud level structure,
regarding mafia countermeasuring
a countermeasure.....

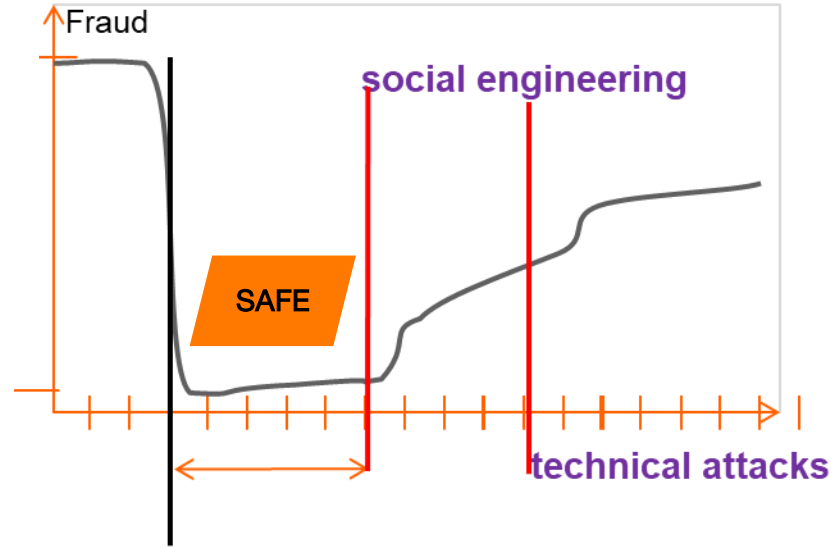


- (1) Yan and Ahmad, A Low-cost Attack on a Microsoft - CAPTCHA 2008
- (2) Solving and creating captchas with free porn (boingboing) - oracle attack –
- (3) <http://www.knowcaptcha.com/shownews.php?id=553> since 2004
- (4) <http://news.vicarious.com/post/65316134613/vicarious-ai-passes-first-turing-test-captcha>

A recurrent generic scheme



A recurrent generic scheme



MTD and particularly **Singularization** approaches drop the system / service in an equivalent area **SAFE**, on demand (for short life duration service).

MTD-singularization use case : Password protection in SaaS mode (1)

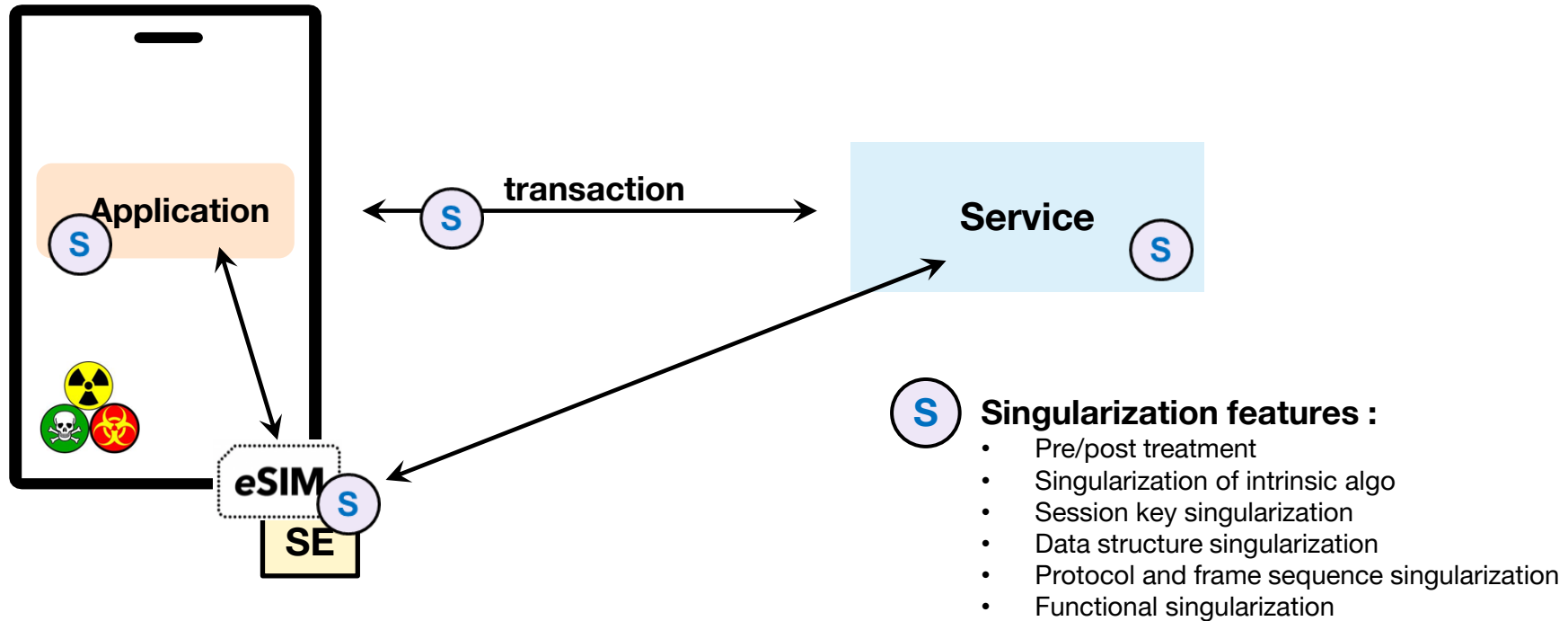
See MTD presentation (AMTD workshop) by Simona David & Mihail Plesa the 28th of May.

MTD-singularization use case : deliver and shared (with multiple parties) a temporary safe environment to proceed some sensitive computation(2)

See MTD presentation (AMTD workshop) by Robert Poenaru the 28th of May.

MTD-singularization use case : On-Demand-Security for an e-transaction (3)

Protect electronic transactions (On Demand Services & Contents) in an uncontrolled / unsafe environment.
Deliver an assurance security level compliant with financial requirements in an hostile environment (or under NIS2/DORA regulations).



MTD-singularization use case : Entanglement principle (4)



Protect a message or deliver a transport key with a very short duration life, based on a temporary (2 to 3 minutes) combination of local ‘evanescent’ (vanishing) parameters and local session keys.

➔ deliver transport protection at the **upper level HIGH (CSA)** for a sensitive information, if the entanglement protocol is at least based on 2 physical secure elements, like eSIM and local Mobile SE (without additional security requirement).

Singularization as an MTD enabler to operate 'On Demand Security' services

By design Singularization :

- address a specific instance of a Service and is used to improve temporary the assurance level of the targeted Service.
- is an On-Demand-Security service, as it targets to deliver/secured a specific instance of a Service when requested,
- focuses on security property and is relatively agnostic regarding the real requesting service

Thanks

