Lessons Learned from Securing MPoC Solutions

Need for Continuous Security

Agenda

1. Intro
2. Evolution of MPoC
3. Risks with COTS devices
4. Certification vs. Continuous Security
5. Lesson Learned
    - Challenges
    - Best Practices

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About Zimperium

Securing mobile applications & devices since 2009

Securing leading Mobile Wallet and SDK solutions since 2014

Securing the leading certified EMVCo SBMP, PCI SPoC and CPoC solutions

Supporting 30+ SoftPOS and HCE developers worldwide

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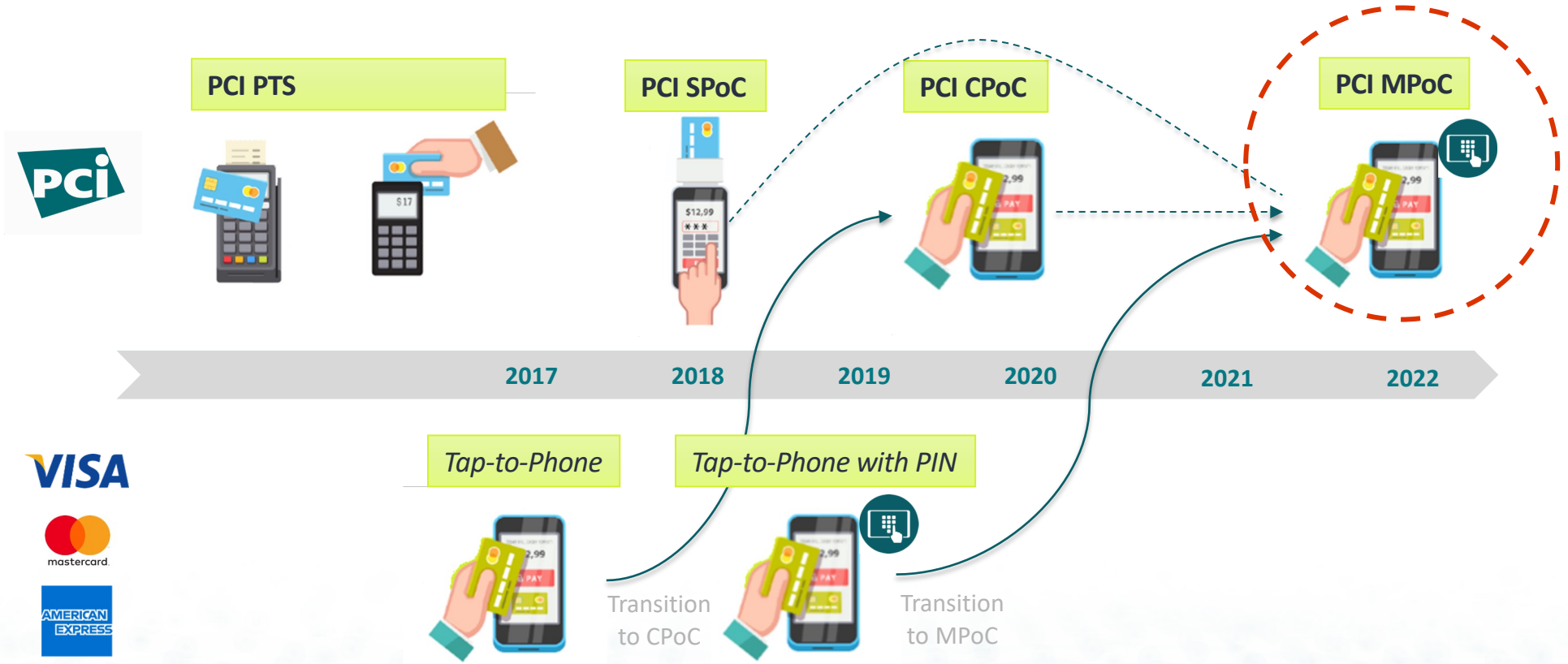
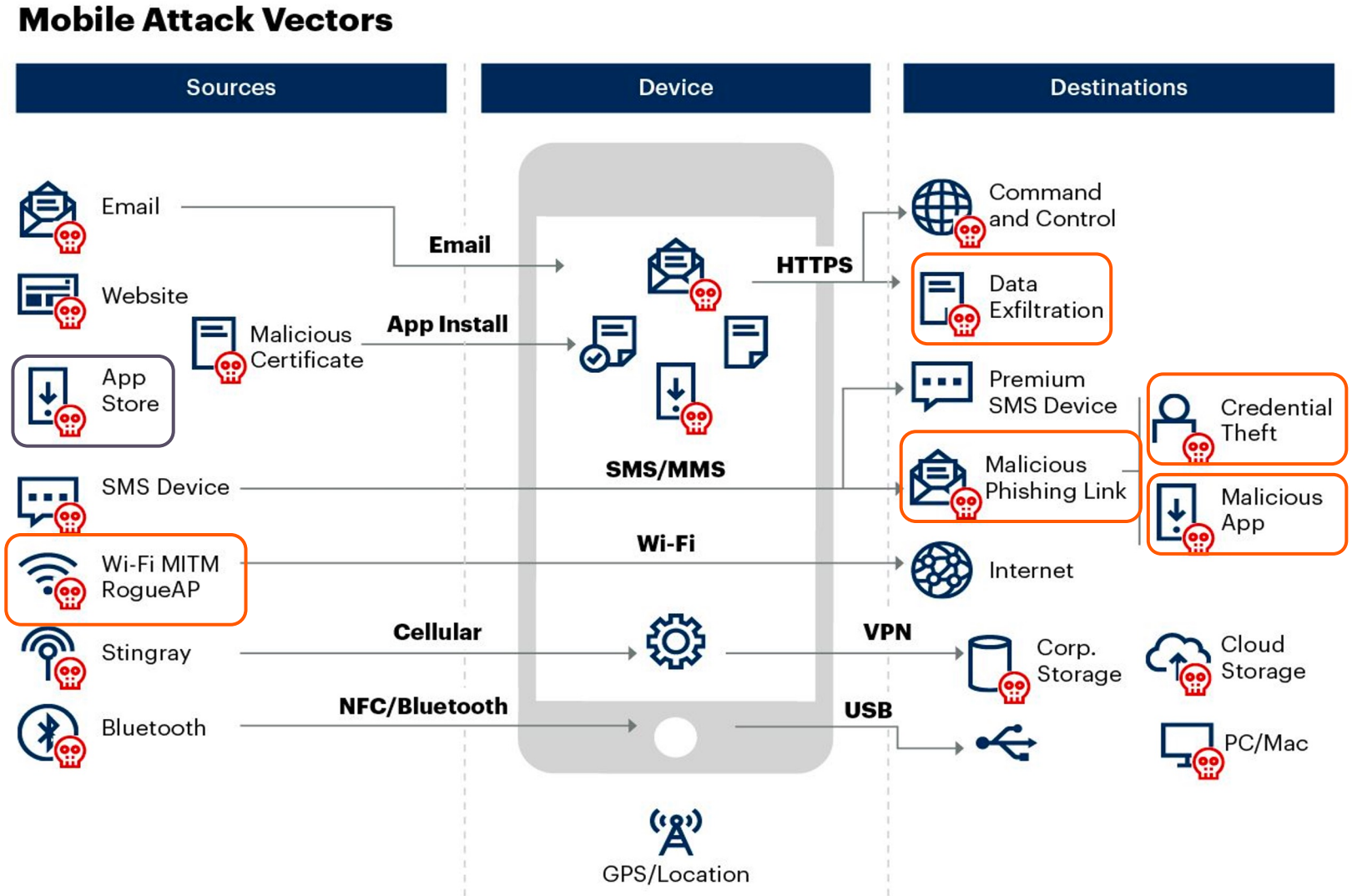
Evolution To MPOC



The problem with COTS mobile devices



MITM = man in the middle; NFC = Near Field Communication

Source: Gartner

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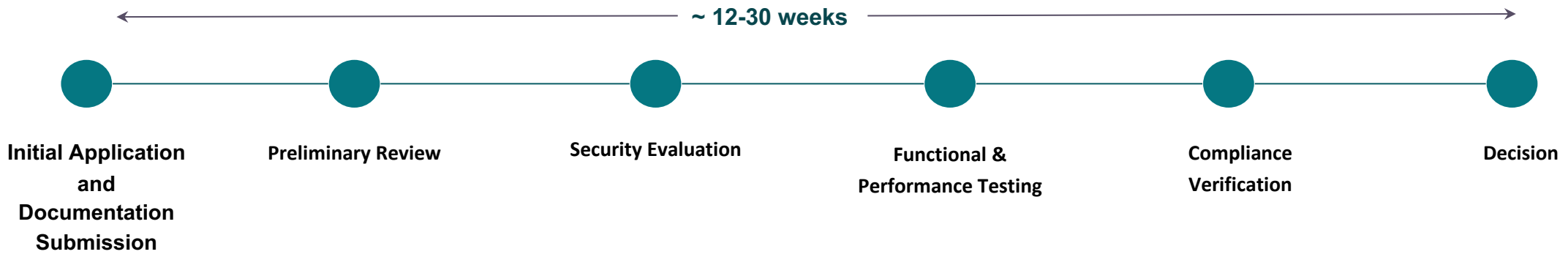
Gartner

Certification vs. Continuous Security



Once the app is released, the real threat begins

Attacker Tools Become More Sophisticated	Sophisticated Malware Variants Emerges	Supply Chain Risks Emerge	New Zero-Day Vulnerabilities Discovered	Continuous Platform Updates Published

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Advanced Attacker Tooling

Evolving Threat Landscape

Magisk | Rooting Tool

- Systemless Rooting
- Evade SafetyNet
- Evasion
- Persistence

Active Community

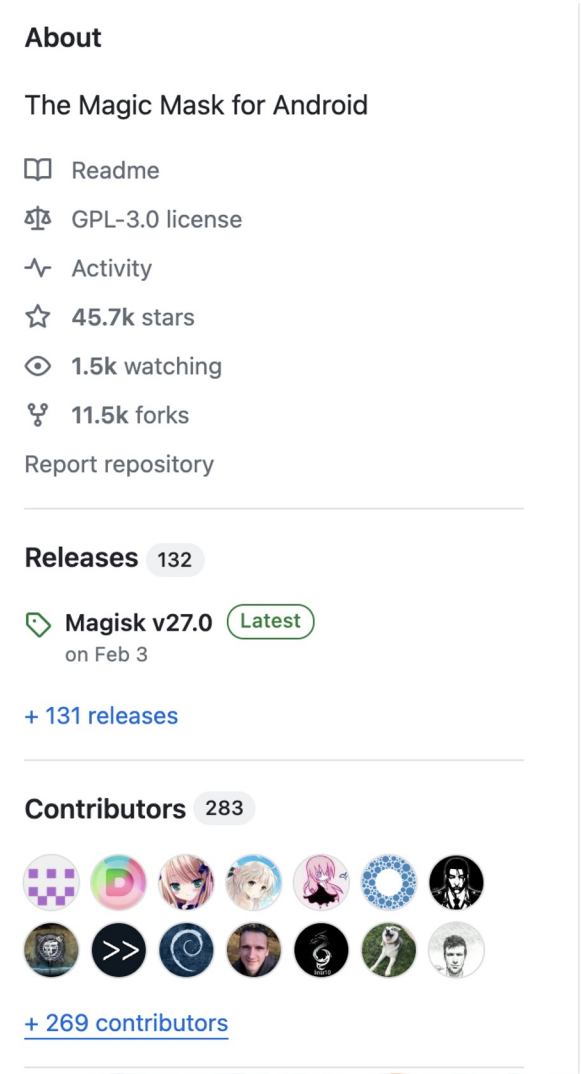
- **283 Contributors**
- 5+ new versions each year
- Active Variants - Kitsune, Alpha, Beta, Canary

Frida | Instrumentation Tool

- Dynamic analysis & manipulation
- Function hooking
- Powerful debugging
- Evasion

Active Community

- **42 Contributors**
- Pre-written scripts & modules
- Updates twice a month



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Malware Evolution and Sophistication

Evolving Threat Landscape

Intercept MFA tokens

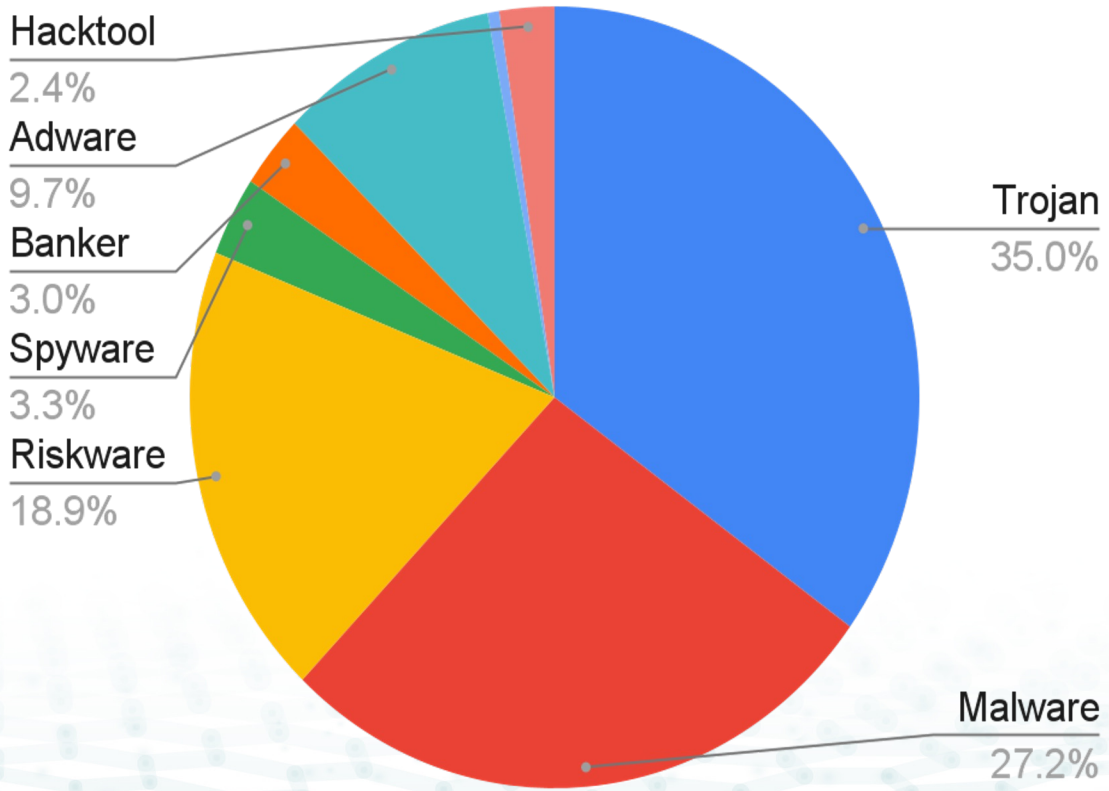
Disable Anti-Malware Apps

Detect & Evade Emulators

Abuse Accessibility Services

Screen Overlay Attacks

Real Time Screen Sharing



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Platform Vulnerabilities & Exploits

Evolving Threat Landscape

During 2022, **53%** of the Android devices detected as **compromised** were in the hands of attackers and **not just rooted** by users.

In 2023, a total of **943 CVEs** were reported for the Android operating system, a **45% increase since 2021**.

In 2023 there were **97 zero-day vulnerabilities** being exploited, a **50%** increase over last year.

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30+ Payments Customers

What Are Some Lesson Learned

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Challenges with Traditional Solutions

Lessons Learned

Static Protections Provides Limited Coverage

Inability to keep up with evolving reversing and tampering tools.

No ability to attest the device on-demand

Inability to assess device risk posture at any given time post-deployment

Lack of Threat Visibility

Inability to alert on attacks and keep up with new threats post-deployment

Security Best Practices

Lessons Learned

Need Multi-Layered App Hardening

Runtime security for Continuous Monitoring and Attestation

ML-Driven threat detection for “Zero-Day” protection

Leverage hardware-agnostic cryptographic keys & PIN protection

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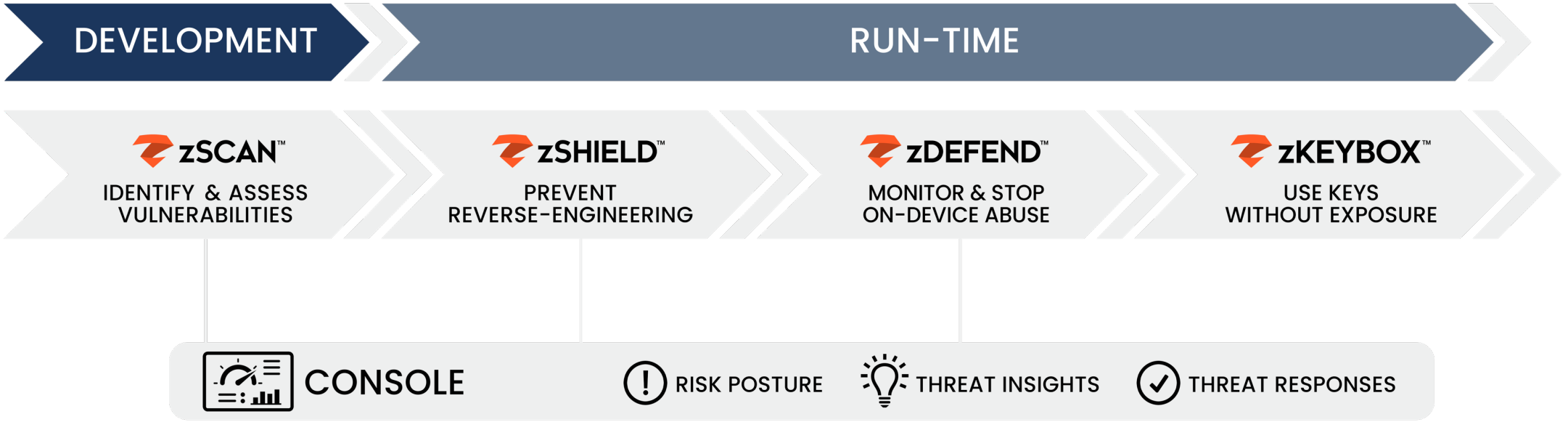
A Single Mobile App Security Platform

MAPS™



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Questions?

Stop by **Booth #9** during networking breaks

Thank You