CYBER SECURITY DIVISION

2013 PRINCIPAL INVESTIGATORS'

Hardware-Enabled Zero Day Protection (HEZDP)

Def-Logix

Paul Rivera

9/5/2013

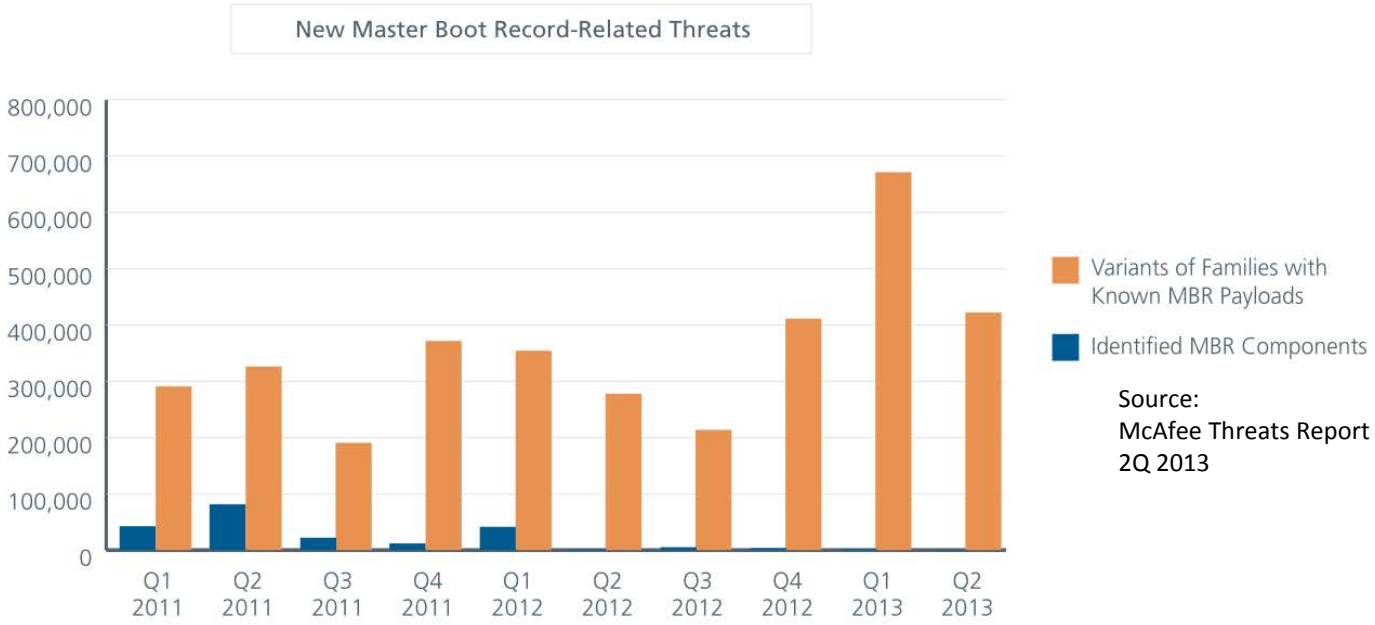
Homeland Security

Science and Technology

Team Profile

- Small Business founded in 2008
- Based out of San Antonio, Texas
- Primary focus on research and development of cyber security software solutions for government customers
- McAfee SIA Partner

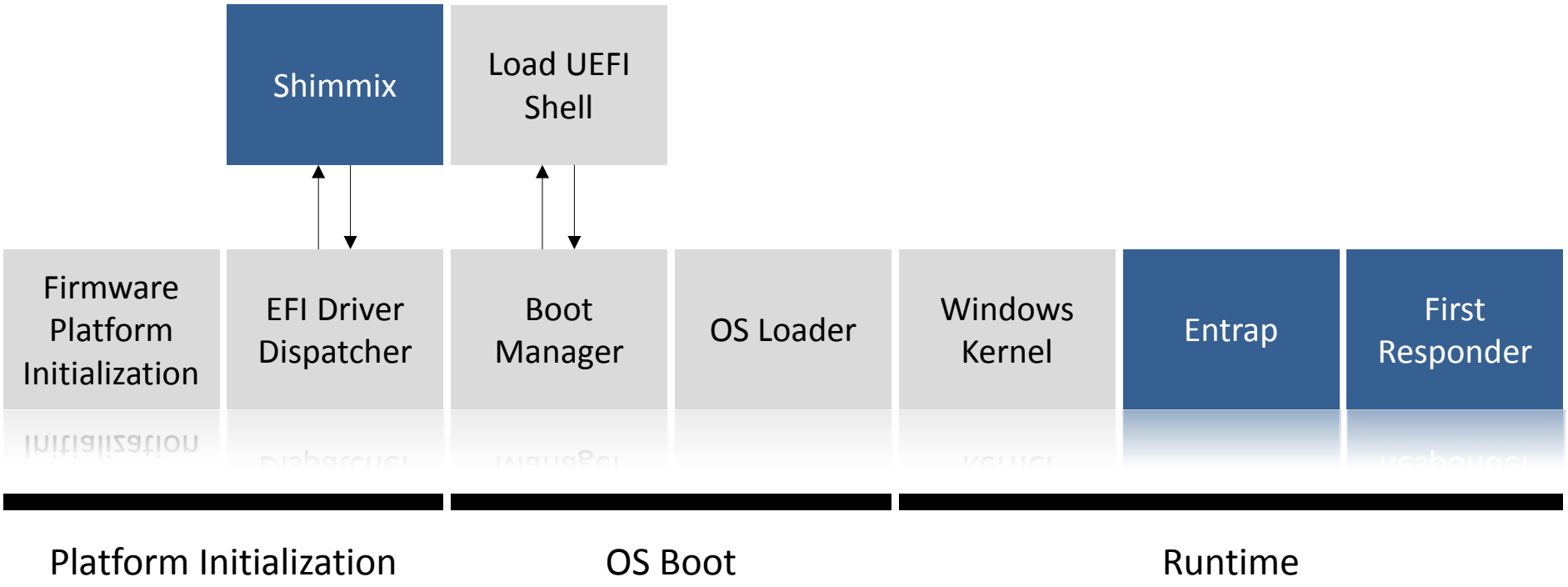
Customer Need



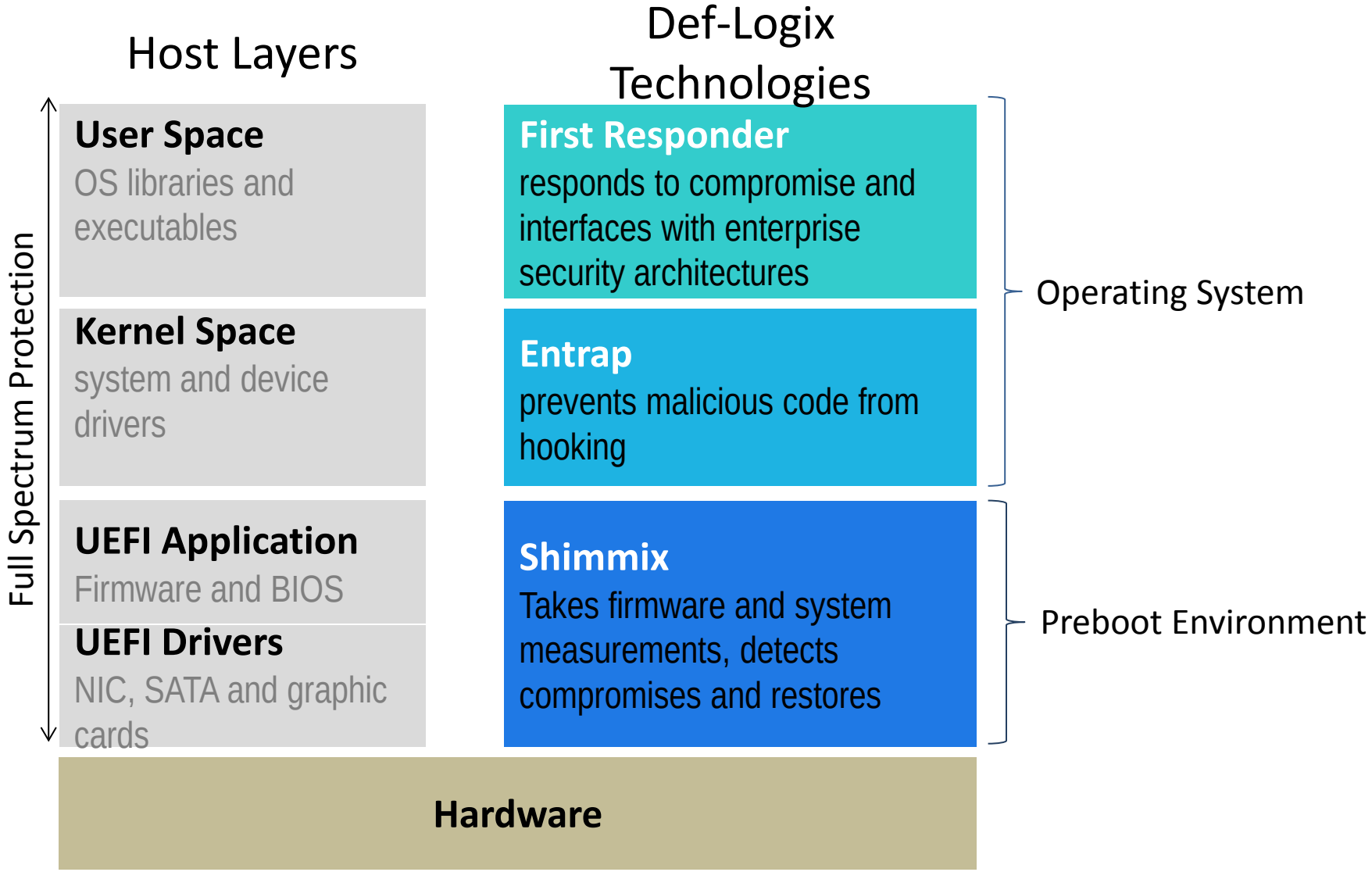
Source:
McAfee Threats Report
2Q 2013

- MS Windows is forcing malware authors to develop new sophisticated new tactics, reaching deep into OS internals.
- Bootkits like TDL4 arose from the need to circumvent Windows Patch Guard. DNS Changer infection showed the power of this technique.
- Worse is to come: BIOS malware will likely arise in response to Windows 8 secure boot.
- Proof of concept BIOS malware “Rakshasa” (Blackhat 2012) has the ability to infect multiple firmware, giving it the ability to survive HD format and BIOS flashing.

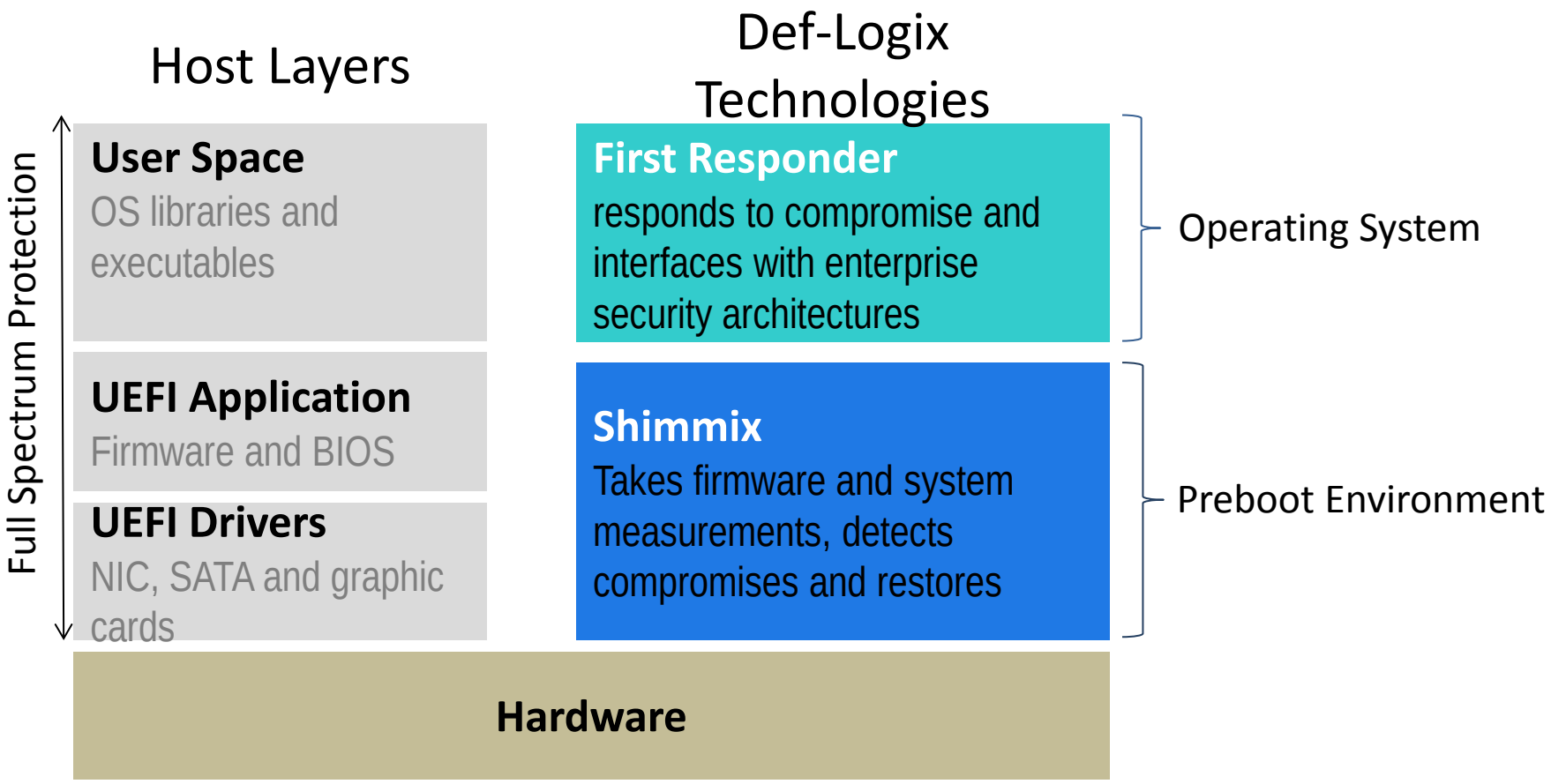
HEZDP in action



Windows 7 HEZDP Deployment



Windows 8 HEZDP Deployment



UEFI Communication

McAfee ePO

First Responder

Windows UEFI Aware

UEFI Applications/Hardware

Approach

- Detection is at a lower level
- Involved with UEFI, Pre-Boot, and Firmware
- Takes pre-boot-time measurements
- Verifies system is in good standing
- Sends anomaly information to First Responder

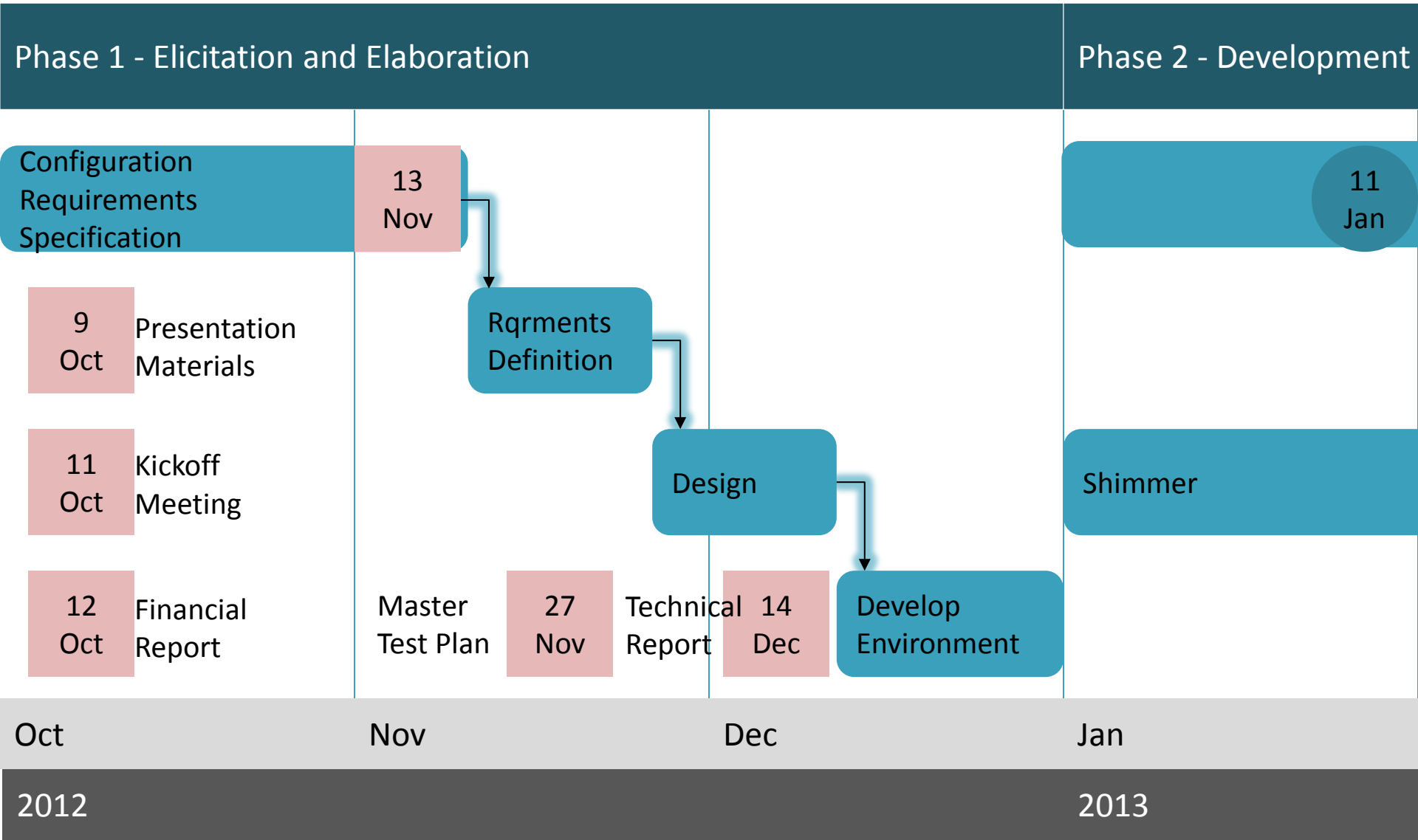
Benefits

- HEZDP provides full-scale protection against a variety of malware and root kits aimed at the kernel, hypervisor, and firmware layers
- HEZDP provides end-to-end trust by enabling hardware to not only thwart attacks, but also be resilient to malware aftermath
- HEZDP has access to UEFI variables and the entire pre-boot process, giving a security capability lower on the host stack than any encroaching malware can reach
- HEZDP measures UEFI variables, system files, and firmware for verification every time the system boots
- Flexibility
- Can Detect Compromised Certificates
- Non-TPM based
- Non- Intel TXT based

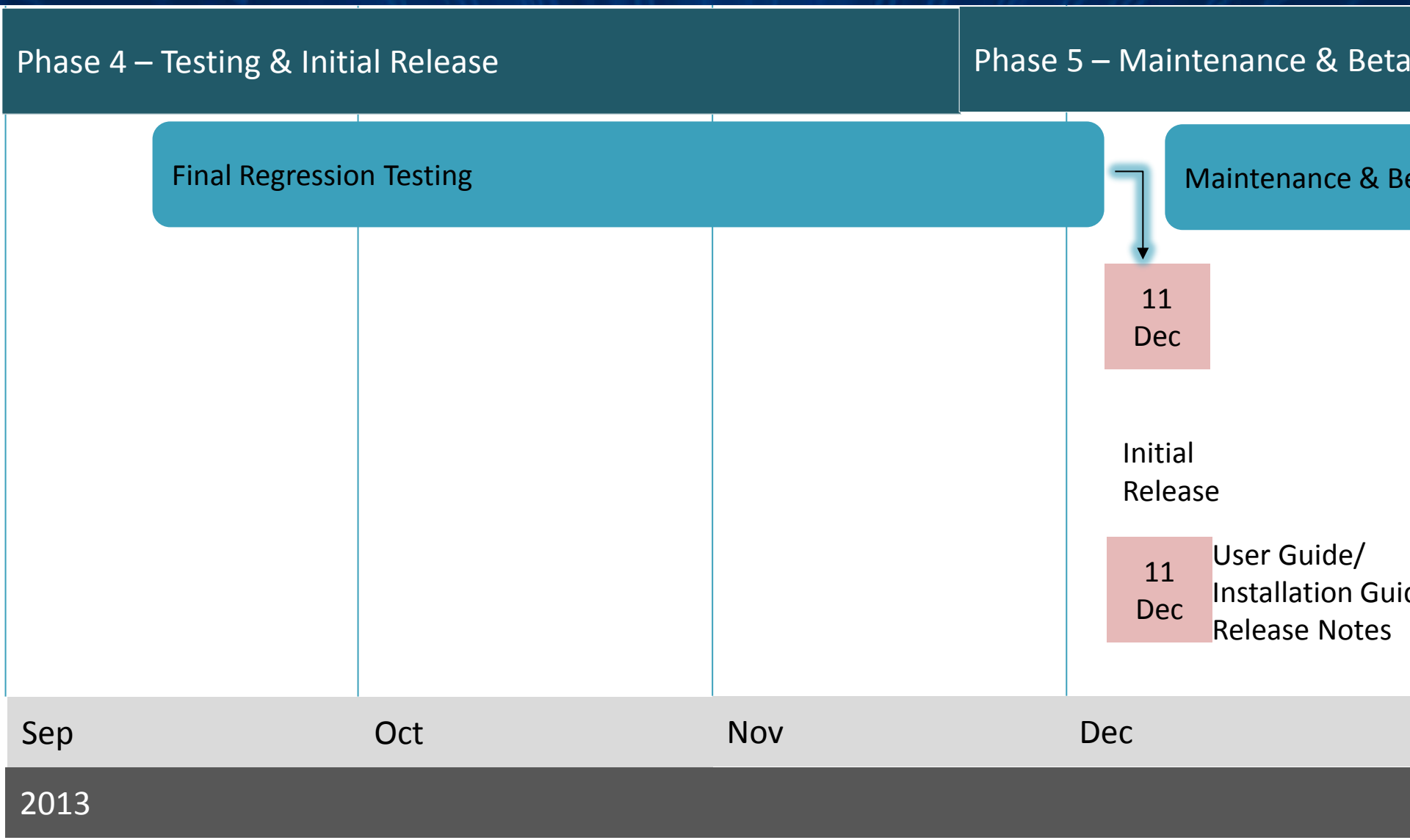
Competition/Complimentary Technology (optional)

- UEFI Secureboot
- Intel Trusted Execution Technology (TXT)
- Microsoft Measuredboot
- McAfee DeepSafe
  - Based on Intel TXT technology

Current Status



Next Steps


Phase 4 – Testing & Initial Release
Phase 5 – Maintenance & Beta
Final Regression Testing
Maintenance & Be
11
Dec
Initial
Release
11
Dec
User Guide/
Installation Guid
Release Notes
Sep
Oct
Nov
Dec
2013

Contact Information

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