Attacking ATT&CK

A Practical Guide for Elevating your Threat-Informed Defense Strategy

January 25, 2024

Frank Duff, Co-Founder and Chief Innovation Officer

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Introduction

Chief Innovation Officer @ **Tidal Cyber**

ex-MITRE, ATT&CK Evals creator, detection engineer at heart, all things ATT&CK

Threat-Informed Defense: *Systematic application & deep understanding of adversary tradecraft and technology to assess, organize, and optimize your defenses*

Get in touch:

- **LinkedIn:** Tidal Cyber / Frank Duff
- **Twitter/X:** @TidalCyber / @frankduff
- **Email:** contact@tidalcyber.com

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The State of Threat-Informed Defense

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Implementing Threat-Informed Defense

More threats are identified each year

More “threat-informed” resources are being published (good news!)

More awareness is needed on how to systematically apply the growing catalog of TID-related content (**cue today’s session**)

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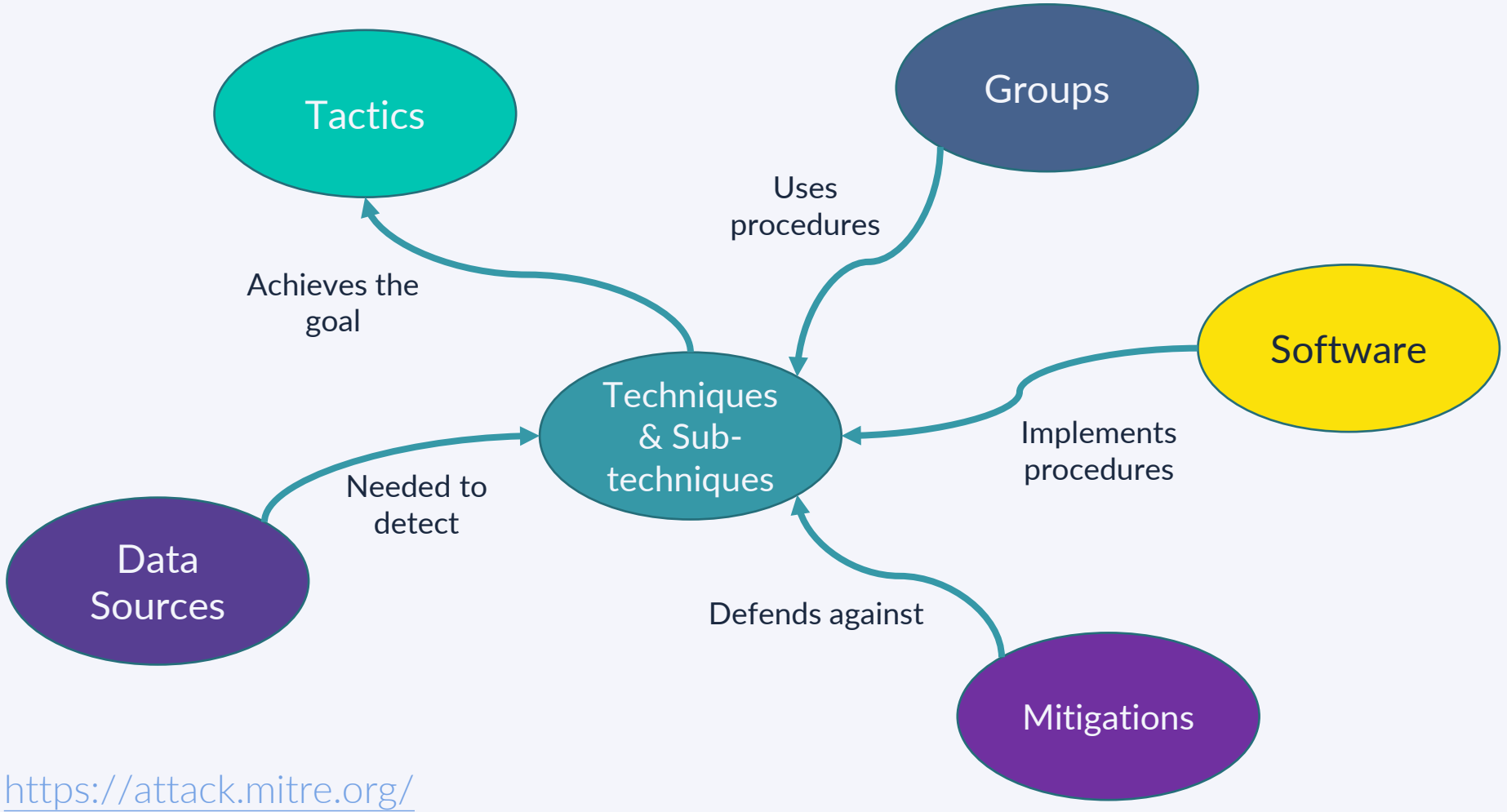
Reintroducing ATT&CK: Connecting the Dots

ATT&CK Knowledge Base elements



https://attack.mitre.org/

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The ATT&CK Way Back Machine

ATT&CK was built out of necessity to solve a specific problem:

Enable cross-team communication from CTI to Blue to Red to Leadership

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Implementing Threat-Informed Defense

Common misconceptions:

- ATT&CK is a comprehensive, always up-to-date CTI source
- Adversary behaviors never change
- Detection-in-Depth = Defense-in-Depth

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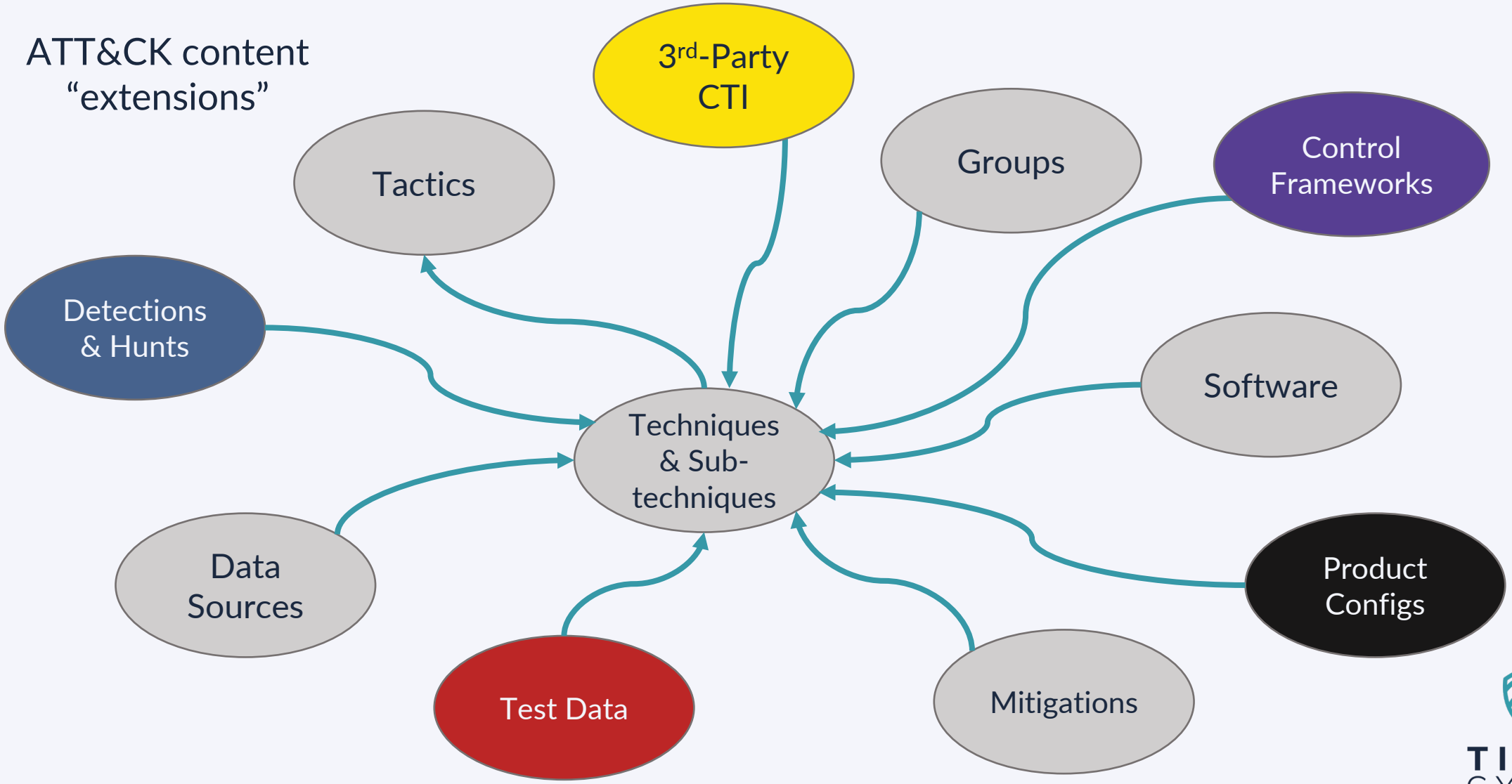

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Threat-Informed Defense: Making Sense of the Dots

- SOC/Security Assessments
- Stack Optimization
- Threat Analysis
- GRC
- Vuln Management / Prioritization
- Testing
- Detection Engineering
- Threat Hunting

And so many more…

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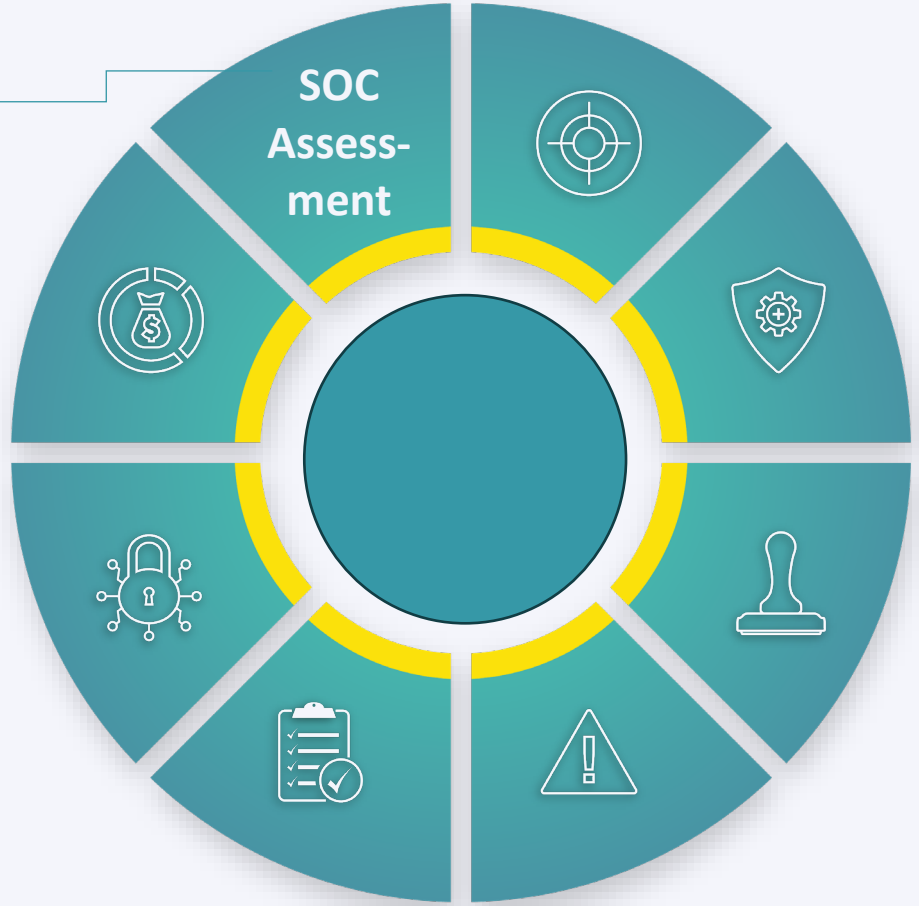
Threat-Informed Defense: Making Sense of the Dots

Eliminates significant expense of coverage analysis.



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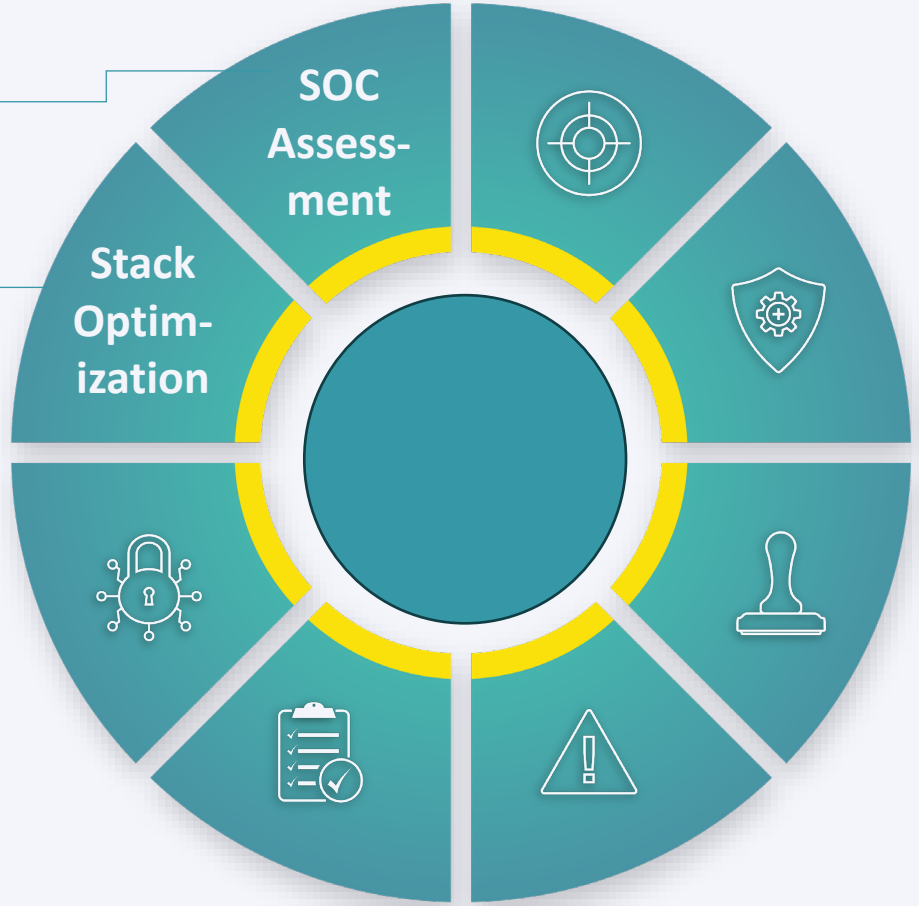
Threat-Informed Defense: Making Sense of the Dots

Eliminates significant expense of coverage analysis.

Identifies unnecessary redundancies and opportunities for savings.



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Threat-Informed Defense: Making Sense of the Dots

Eliminates significant expense of coverage analysis.

Identifies unnecessary redundancies and opportunities for savings.

Eliminates expensive grunt work and provides actionable behavioral context

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Threat-Informed Defense: Making Sense of the Dots

Eliminates significant expense of coverage analysis.

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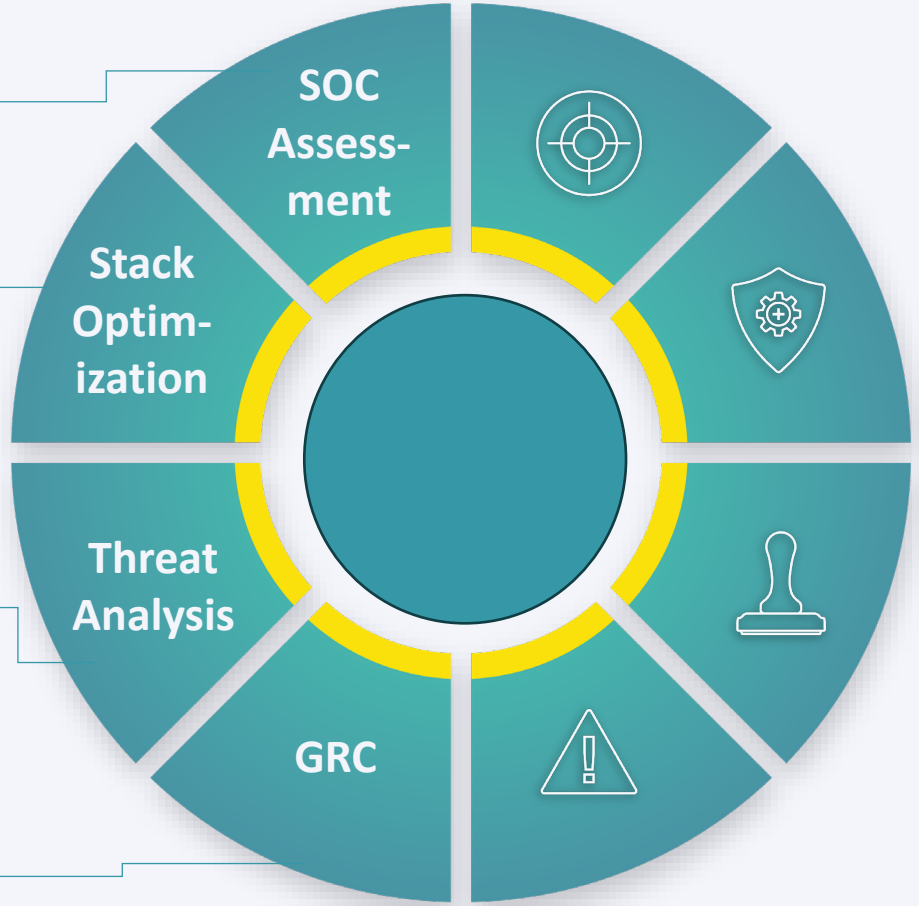
Eliminates expensive grunt work and provides actionable behavioral context

Calculates the security benefit of control standards. Makes value-at-risk finally practical.



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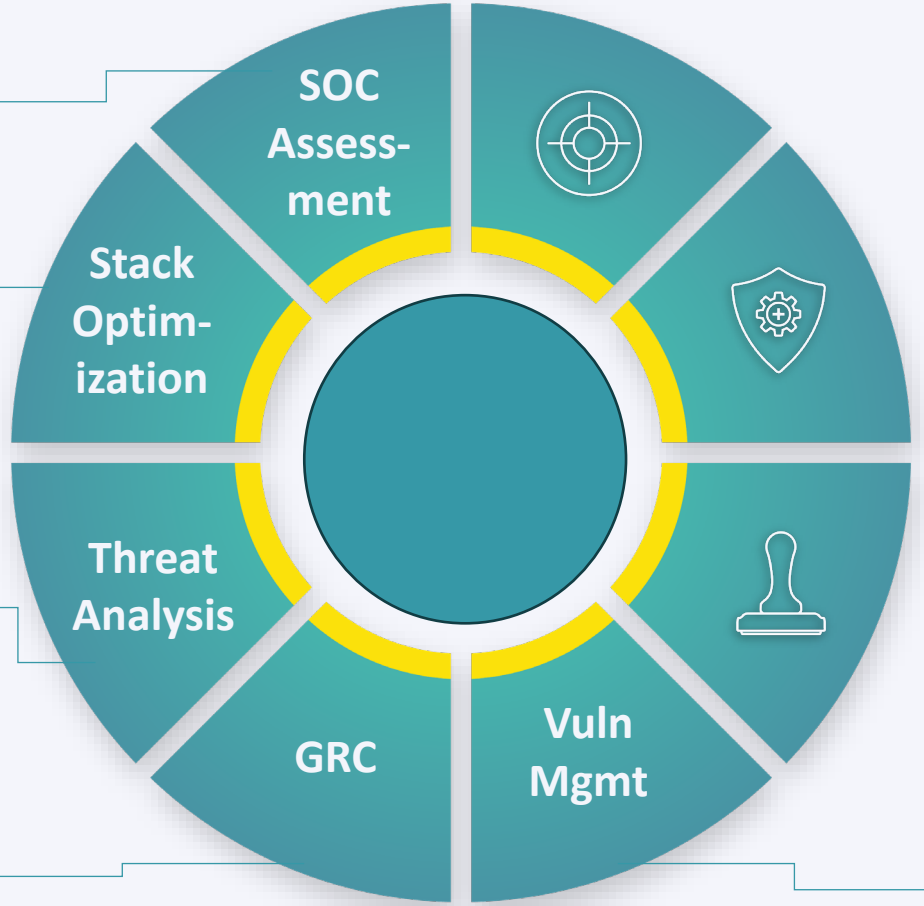

Calculates exploitability post-initial access. Eliminates overemphasis on patching.

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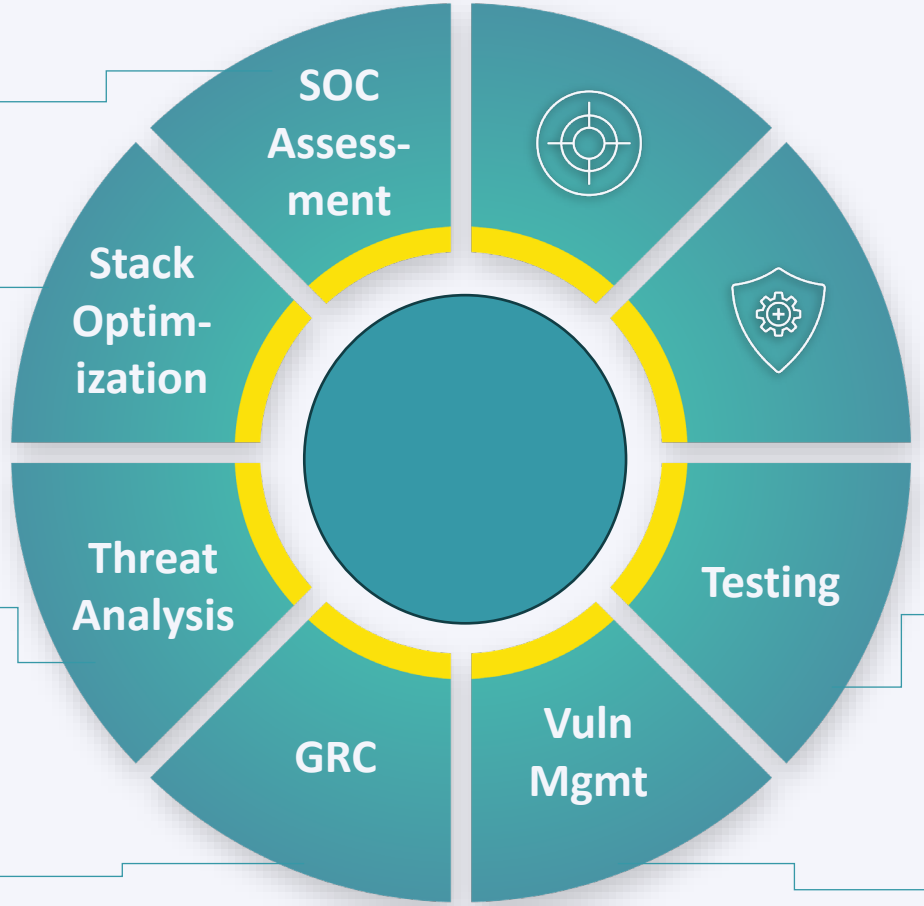

Prioritizes testing based on residual risk. Integrates empirical data into efficacy assumptions.

Calculates exploitability post-initial access. Eliminates overemphasis on patching.

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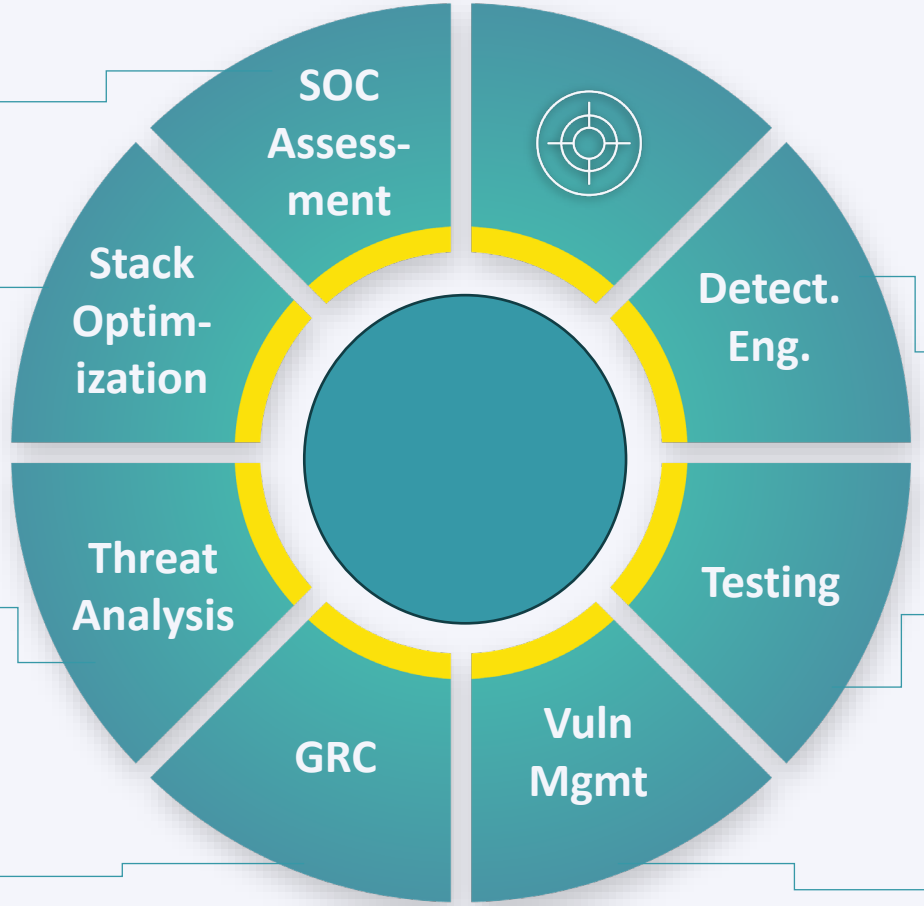

Focuses expensive detection engineering resources on most risky threats.

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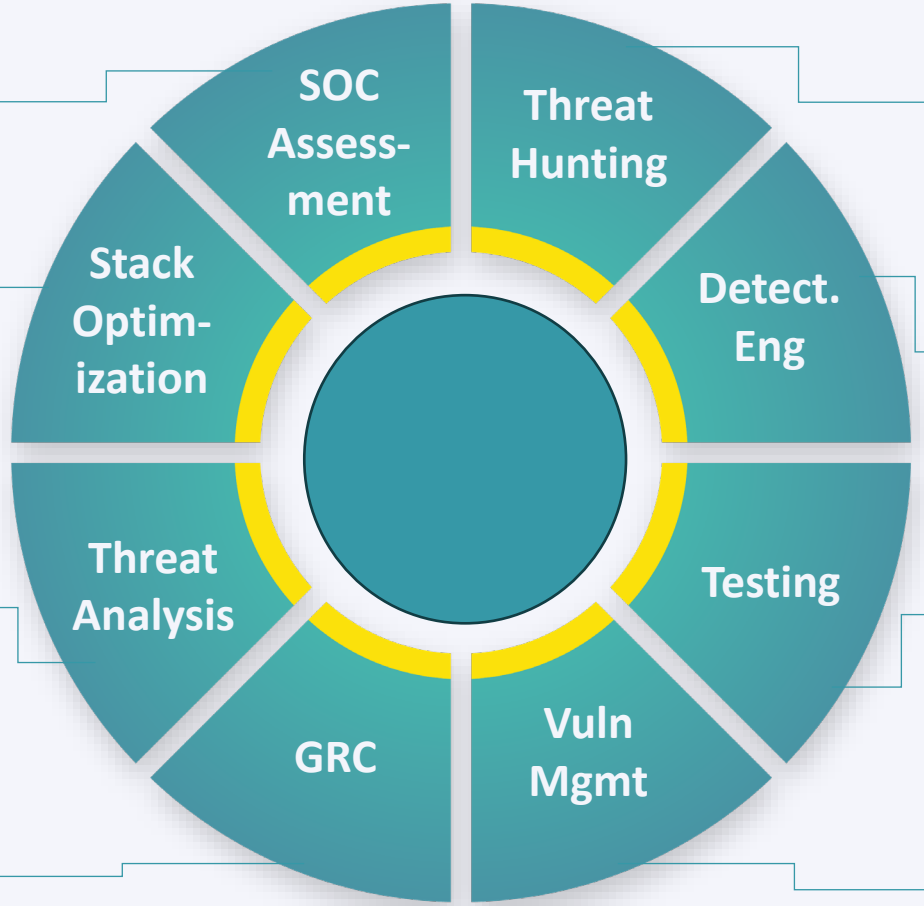

Prioritizes hunts toward behaviors that represent greatest risk.

Focuses expensive detection engineering resources on most risky threats.

Prioritizes testing based on residual risk. Integrates empirical data into efficacy assumptions.

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Maturing a Threat-Informed Defense Program

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A basic security question:

Can we defend against “X”?

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A basic security question:

Can we defend against “X”?

Most of us can’t answer it.

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This question is fundamental to security

So why do we struggle to answer it?

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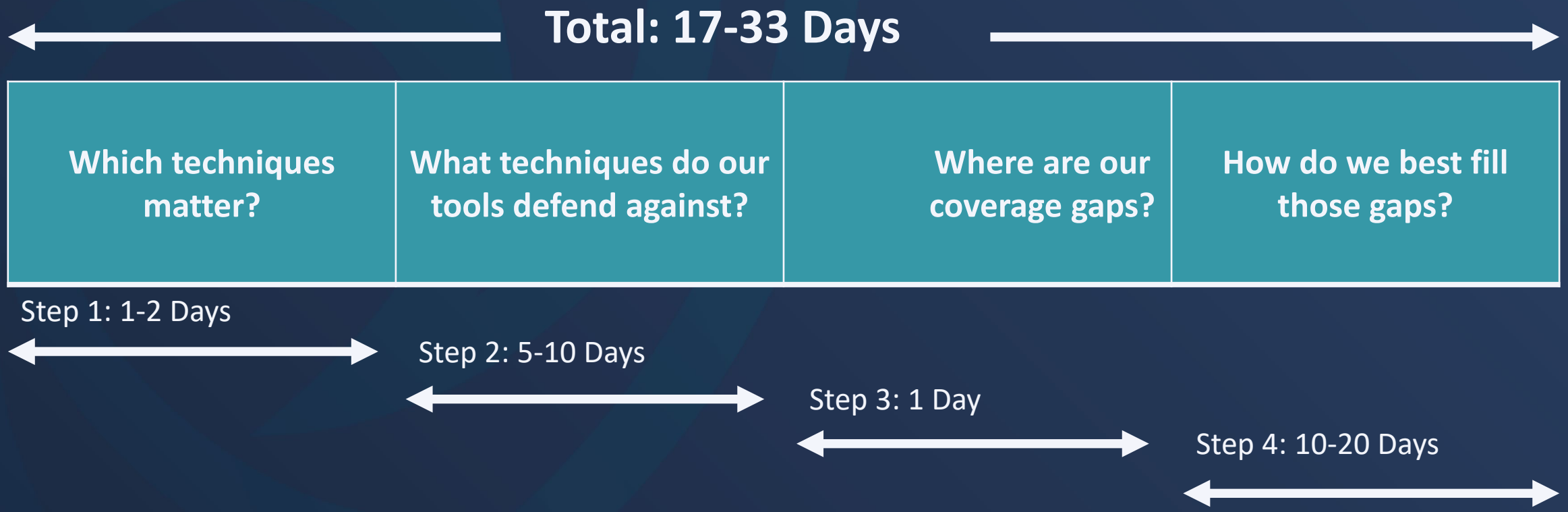
Answering this question is time consuming:



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Time is money…

The analysis has been prohibitively expensive:

$680K - $1.3M

$100/hr x 17-33 days x 8 hours/day x 50 threats

- Repeat as threats evolve
- Update for new products/feature releases
- Repeat periodically (annually)

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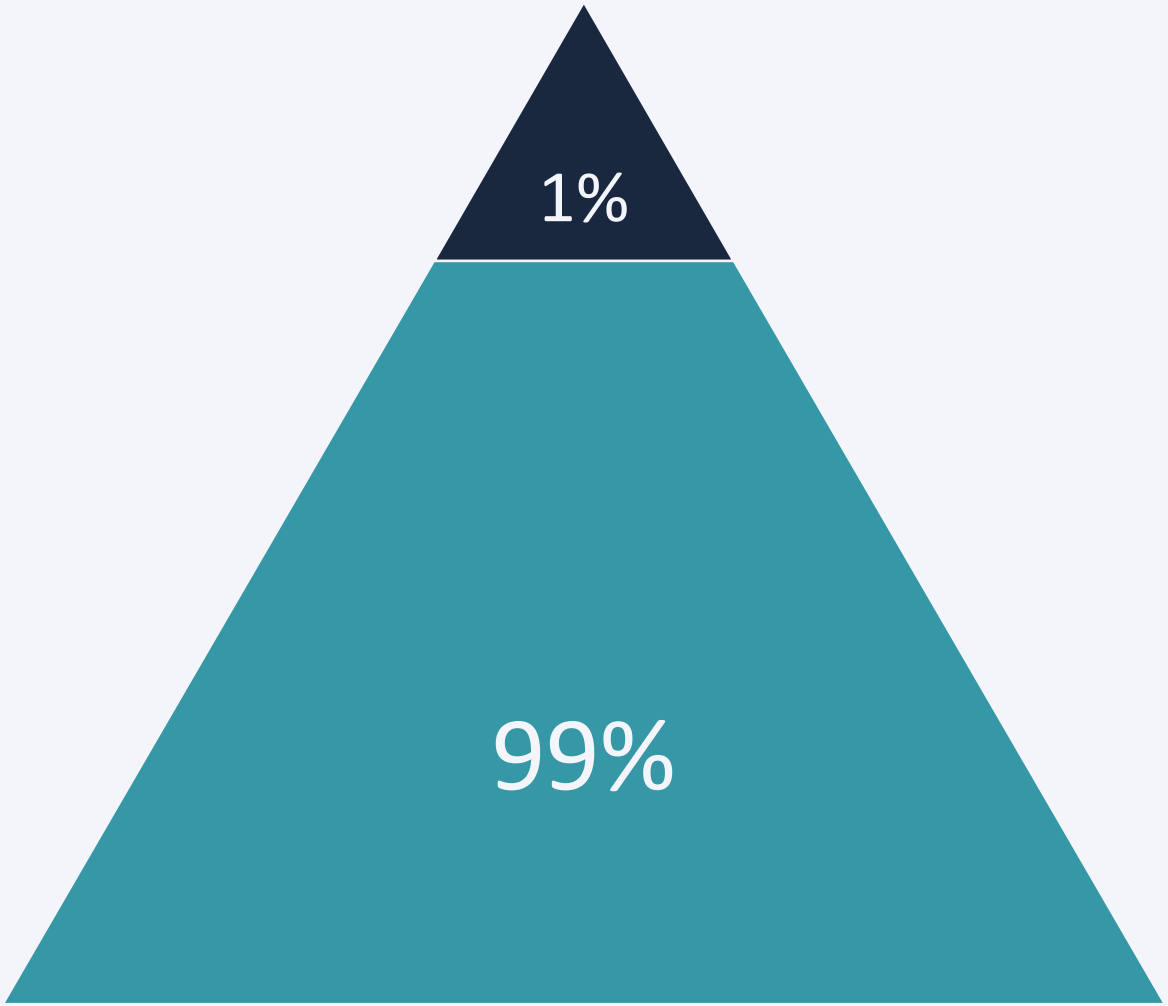
What is actually happening?



Top 1%

- Coverage Mapping
- Annual and Manual
- Spreadsheets and Weekends
- $$$$

Most of us

- Guess
- Convince ourselves we know

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Stop Guessing

Threat-Informed Defense makes knowing practical

- ✓ Prioritize TTPs that matter most
- ✓ Identify important coverage gaps
- ✓ Recommend the most impactful actions
- ✓ Evolve automatically as adversaries and products evolve

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A New Approach to Security

The traditional focus on vulnerabilities isn't sufficient for defenses anymore.

Threat-Informed Defense looks at your enterprise from the perspective of the adversary, giving critical insights into how to prioritize your security operations and investments.

Shrink weeks of work into minutes and save time and money.

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Why can’t we answer this basic question?

Threat Intelligence

Most of us don’t know:

- If “X adversary” is targeting us
- What techniques adversary “X” has been using
- If our intelligence is specific enough
- Which techniques are riskier/more important

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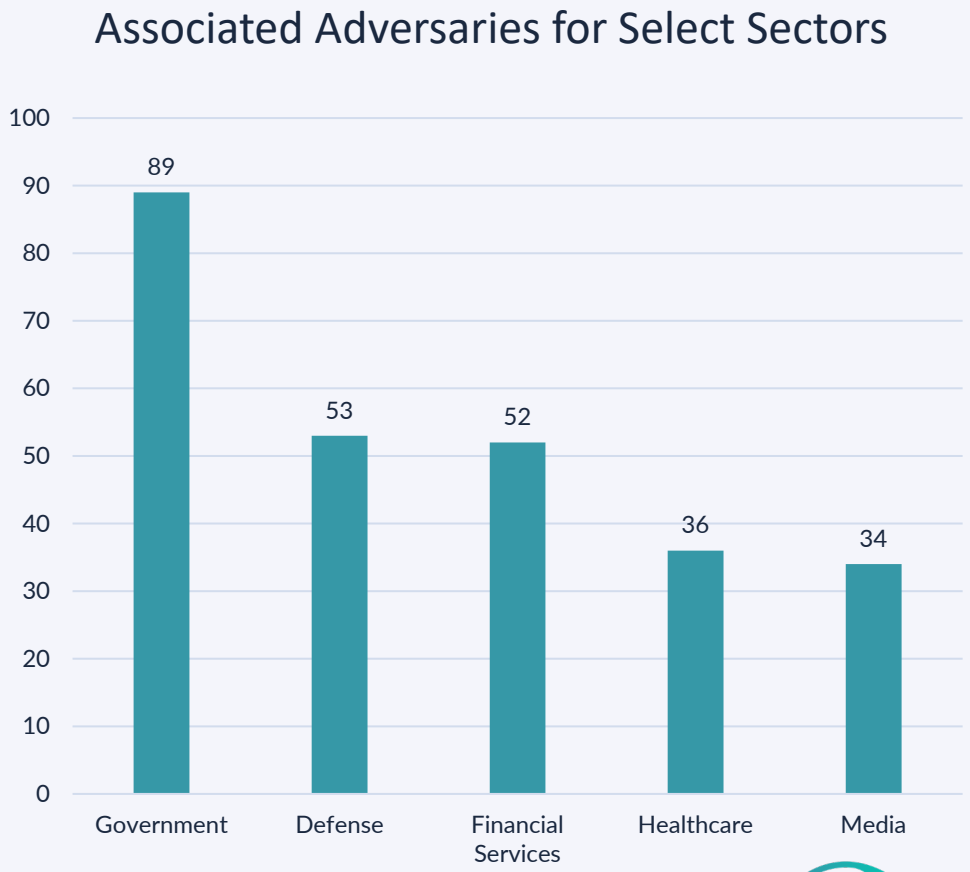
Solution: Threat Profiling

Full methodology: tidalcyber.com/ultimate-guide-to-cyber-threat-profiling

Sector- & geography-based profiling

Refine further (or expand) with:

- Tool & TTP count, density, & importance (Capability)
- Adversary Type, Motivation, Sub-sector (Capability & Intent)
- Reference date (Recency)
- Reference count (Prominence)



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Why can’t we answer this basic question?

Defensive Intelligence

Most of us don’t know:

- **What techniques are our tools capable of defending against**
- **Whether those capabilities are configured**
- **How effective are those capabilities**
- **The incremental impact of each capability**

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Solution: Defensive Stacking

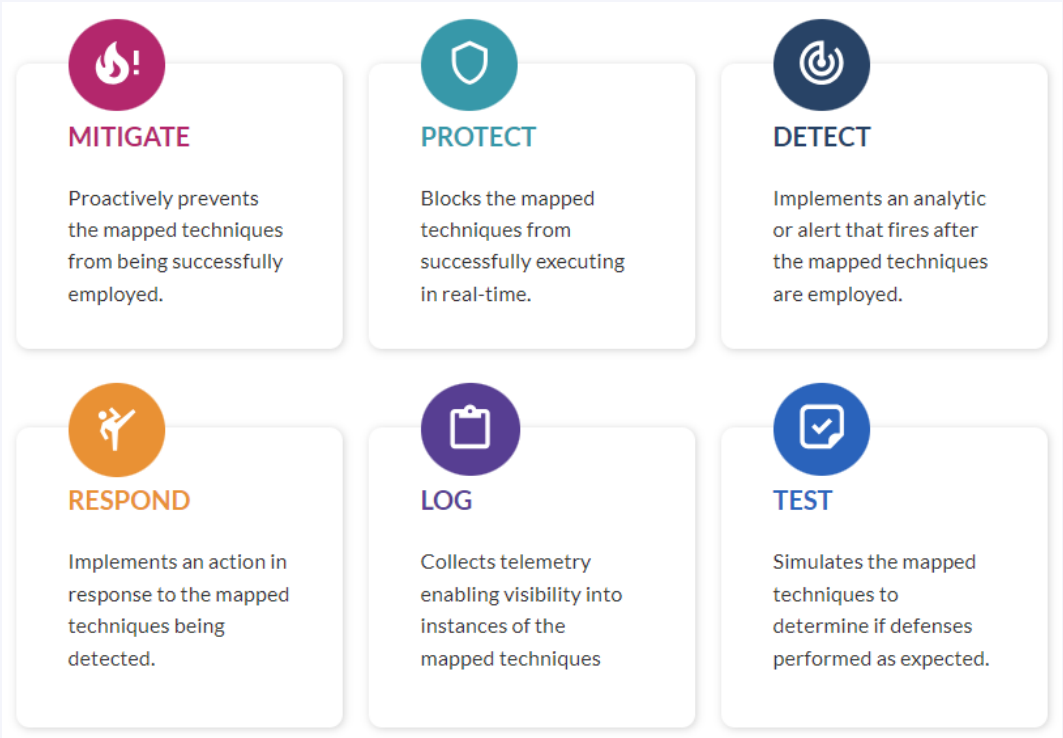
Vendor ATT&CK mapping has increased dramatically: app.tidalcyber.com/vendors

Model defenses *across the spectrum* of capability types

Further granularity via weighting by:

- Tactic & Technique importance
- Capability Type
- Configuration state (default vs. custom)
- Capability effectiveness

Primary Defensive Capability Types



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Putting it all Together

THREAT PROFILING

THREAT OBJECTS	WEIGHTED TECHNIQUES
Groups	*examples*
Software	Phishing
Campaigns	Drive-by
	Brute Force
	Input Cap
	Net Sniff
	Unsec Cred

Knowledge Base
(Updated/Enhanced ATT&CK Data)

Assess

COVERAGE MAPPING

Calculates residual risk for each technique

DEFENSIVE STACKING

PRODUCT INTEGRATIONS

SIEM EDR Analytics Other

Capability Registry
(>15,000 capabilities shared by vendors and valuable analytics)

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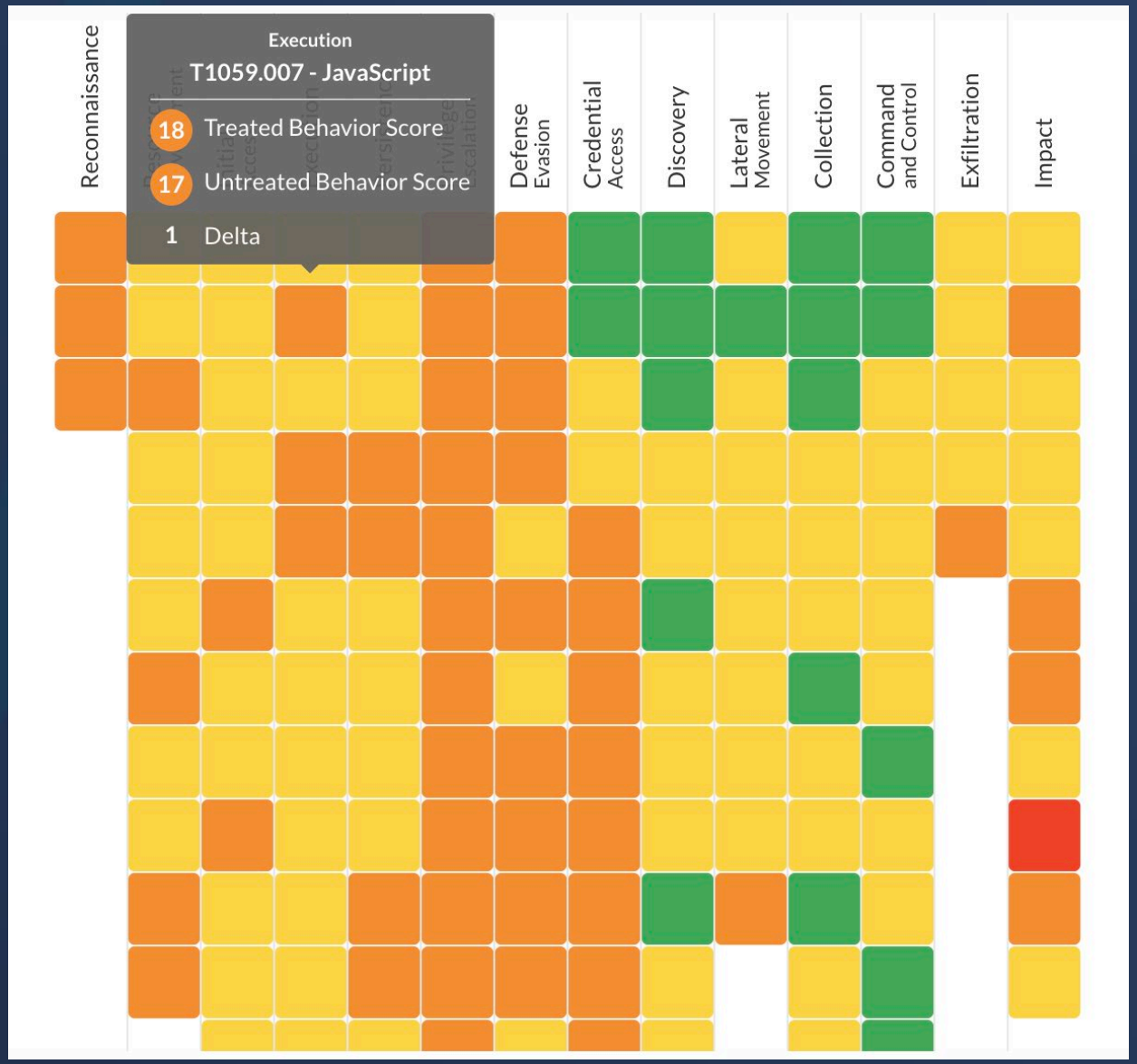
Coverage Mapping

- Coverage that is personal
  - ATT&CK is not checkboxes
  - ATT&CK is not a bingo card
- Understand inherent risk
- Automatically calculate residual risk across every technique
- Illuminate high residual risk for prioritization



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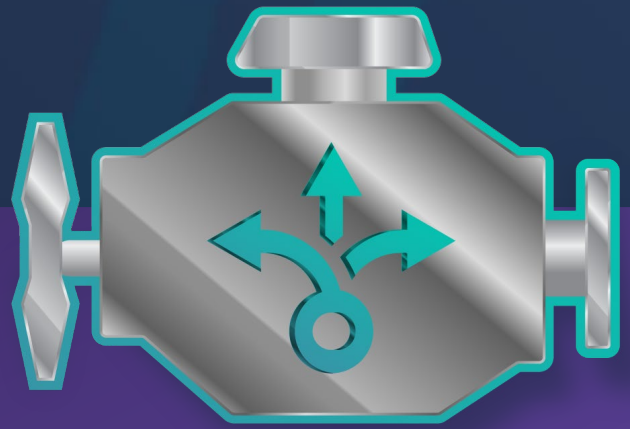
Knowledge Base
(Updated/Enhanced ATT&CK Data)

Improve



RECOMMENDATION ENGINE

Automatically identifies best actions to take

DEFENSIVE STACKING

PRODUCT INTEGRATIONS

SIEM | EDR | Analytics | Other

Capability Registry
(>30,000 capabilities shared by vendors and valuable analytics)

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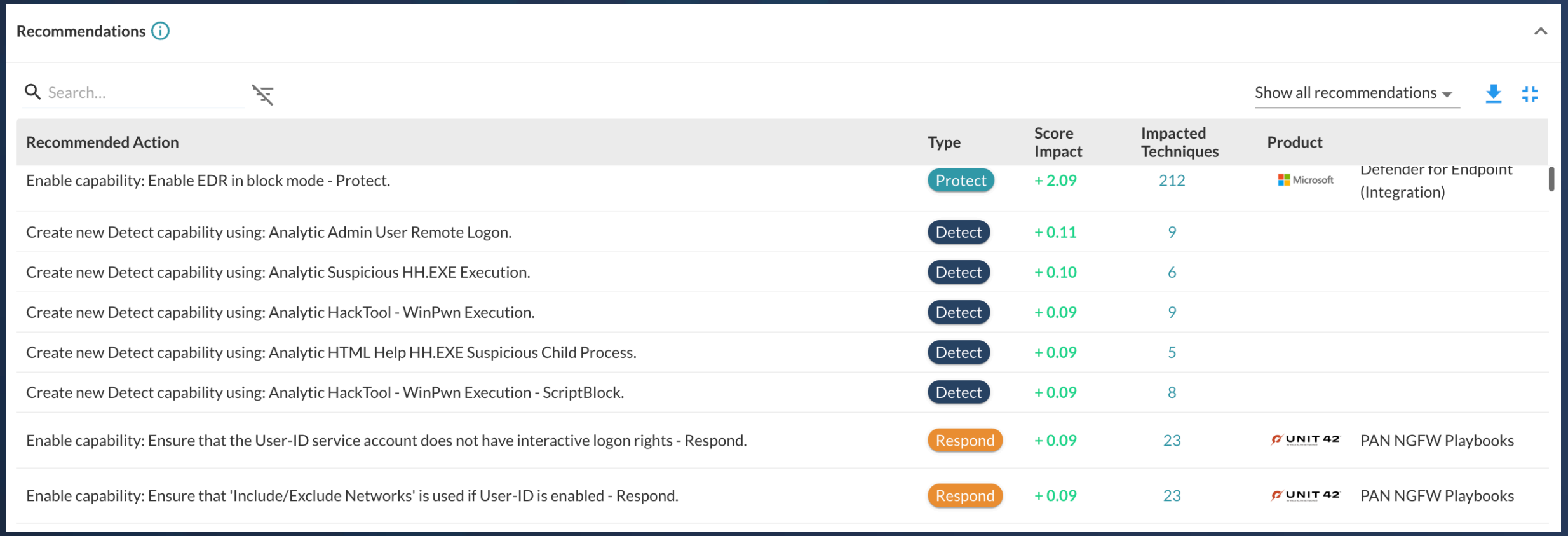
Automated Recommendation Engine

- Prioritize actions based on the reduction of residual risk



Recommended Action	Type	Score Impact	Impacted Techniques	Product	
Enable capability: Enable EDR in block mode - Protect.	Protect	+ 2.09	212	Microsoft	Defender for Endpoint (Integration)
Create new Detect capability using: Analytic Admin User Remote Logon.	Detect	+ 0.11	9		
Create new Detect capability using: Analytic Suspicious HH.EXE Execution.	Detect	+ 0.10	6		
Create new Detect capability using: Analytic HackTool - WinPwn Execution.	Detect	+ 0.09	9		
Create new Detect capability using: Analytic HTML Help HH.EXE Suspicious Child Process.	Detect	+ 0.09	5		
Create new Detect capability using: Analytic HackTool - WinPwn Execution - ScriptBlock.	Detect	+ 0.09	8		
Enable capability: Ensure that the User-ID service account does not have interactive logon rights - Respond.	Respond	+ 0.09	23	UNIT 42	PAN NGFW Playbooks
Enable capability: Ensure that 'Include/Exclude Networks' is used if User-ID is enabled - Respond.	Respond	+ 0.09	23	UNIT 42	PAN NGFW Playbooks

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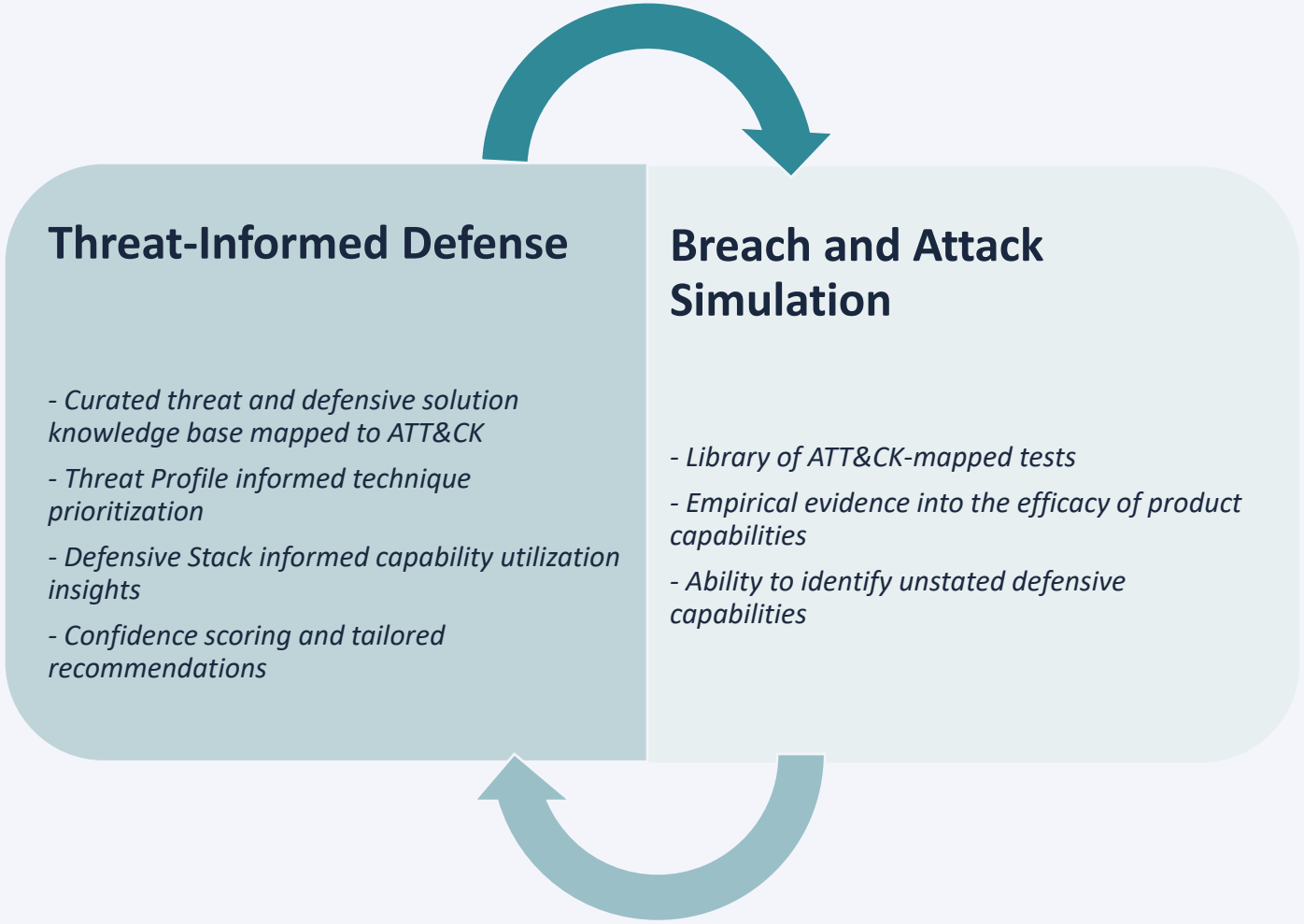
Better Together

Threat-Informed Defense and Breach and Attack Simulation



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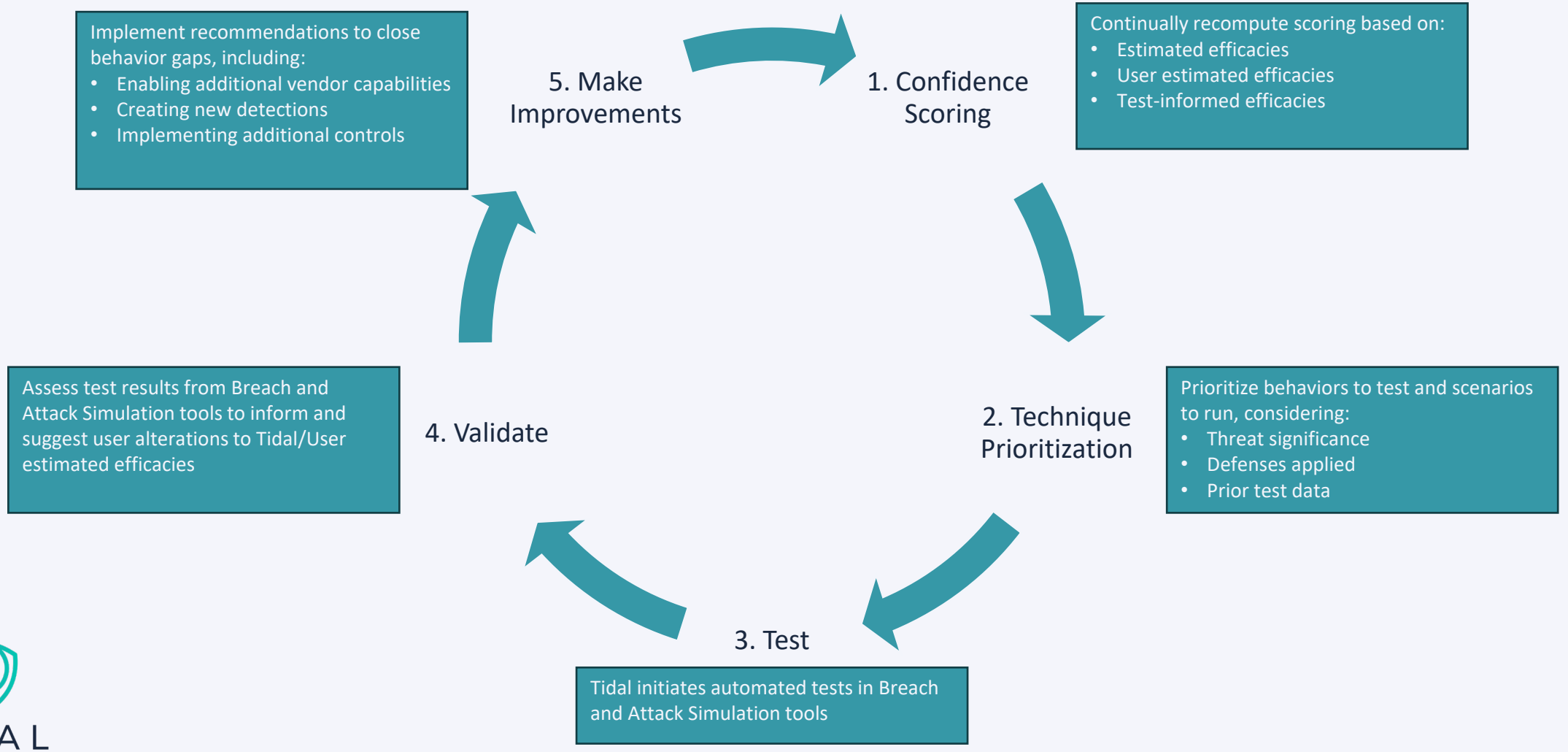
BAS / Test Lifecycle

Improve Confidence Accuracy with Testing



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Why Keep Guessing?

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Thank You!

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- Threat Profiling Guide: tidalcyber.com/ultimate-guide-to-cyber-threat-profiling
- Tidal Blog: tidalcyber.com/blog
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