



SHIELD 1.0

SMART HACKATHON FOR INTELLIGENCE, ENFORCEMENT,
LAW & DEFENSE



SHADOWTRACE - TRACING SHADOWS, FIGHTING DRUGS

Problem Statement- “Software Solutions to Identify Users Behind Social Media Drug Trafficking”

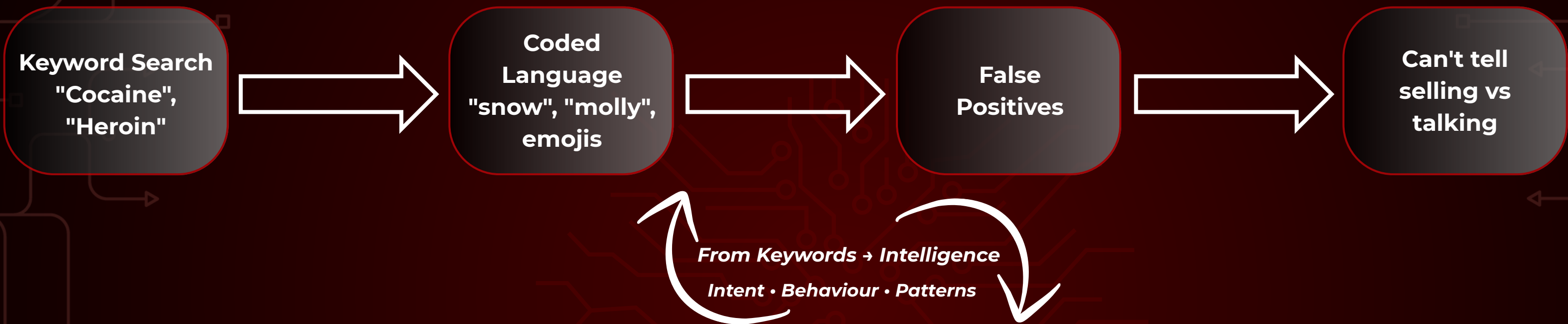
Team: Shadow Corps



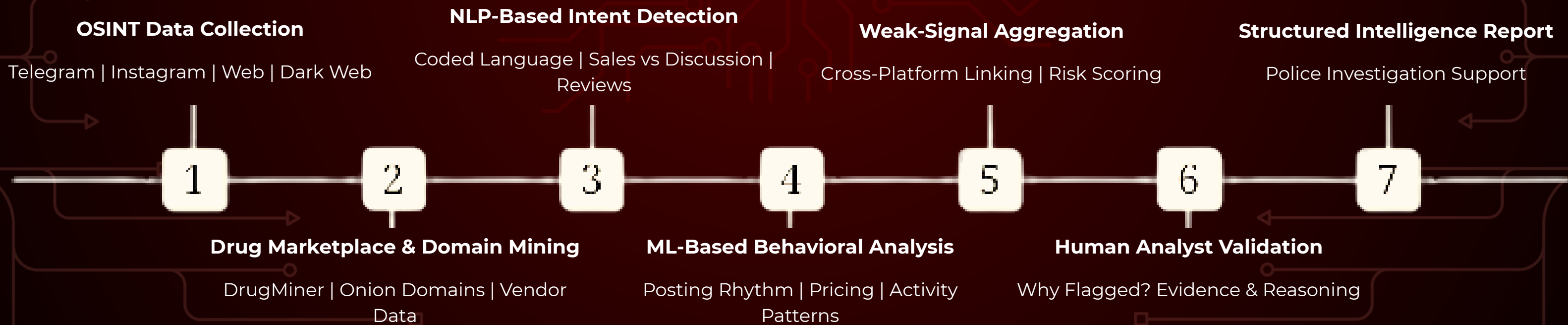


THE CORE IDEA: INTELLIGENT DETECTION

Current Detection Problem



How ShadowTrace Works



Outcome: Identify real drug sellers, not just suspicious words



WHAT SHADOWTRACE WILL DO

Primary Goals (What we want to achieve)



Detect Real Drug Selling

using behavior based analysis, not just keywords



Understand Intent

Telegram + Instagram + Dark Web = ONE picture



Defeat coded language

Recognize slang (snow, molly, zaza, etc.)
Understand context (pricing, delivery terms)



Support investigations

Generate intelligence reports and ensure trust & transparency



Expected Functionality and system workflow

OSINT data collection and Continuous Monitoring

Track Telegram, forums & dark web
Monitor channels, markets & domains

Marketplace & Infrastructure Analysis

Identify slang, emojis & listings
Analyze vendors, prices & activity

AI- Based Intent & Behavioral Analysis

NLP for decoding hidden language
ML to detect suspicious behavior patterns

Cross Platform Linking & Explainable Risk Assessment

Link users, platforms & infrastructure
Explainable risk scoring

Human validated Intelligence Reporting

Analyst-validated insights
Actionable law-enforcement reports



TECHNOLOGY STACK & TECHNICAL ARCHITECTURE

System Architecture Flow



SYSTEM LAYERS	TECHNOLOGIES
Data Collection	Python, Telethon, Scrapy, Tor + DurgMiner
Storage	PostgreSQL
Analysis	BERT (HuggingFace), spaCy, Scikit-learn, Pytorch
Network Intelligence	XAI Logic, NetworkX
Reporting	PDF/CSV, Graph visuals



Why these tools?

- Open-source & auditable
- Explainable (court & police friendly)
- Scalable for large datasets



Not Used!

- Black-box LLMs (no transparency)
- Regex-only detection
- Manual monitoring



REAL WORLD IMPACT

Who needs
ShadowTrace



NCB
National

CID
State

STATE POLICE
Field

CUSTOMS
Border

TRADITIONAL MONITORING

Keyword-based
detection

Black-box alert
systems

Limited context
understanding

Platform-isolated
analysis

High false positive
rates

PROPOSED SYSTEM

Intent & behavior-
based analysis

Explainable,
transparent outputs

Generates
intelligence report
with evidence

Cross-platform
intelligence linking

Shows network: Supplier
-> Dealer -> Buyer

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• Time

80% faster
Weeks → Days

• Accuracy

Fewer false leads
Higher conviction support

• Scale

100s → 10,000s channels
Parallel monitoring

• Value

Better use of manpower
Stronger cases