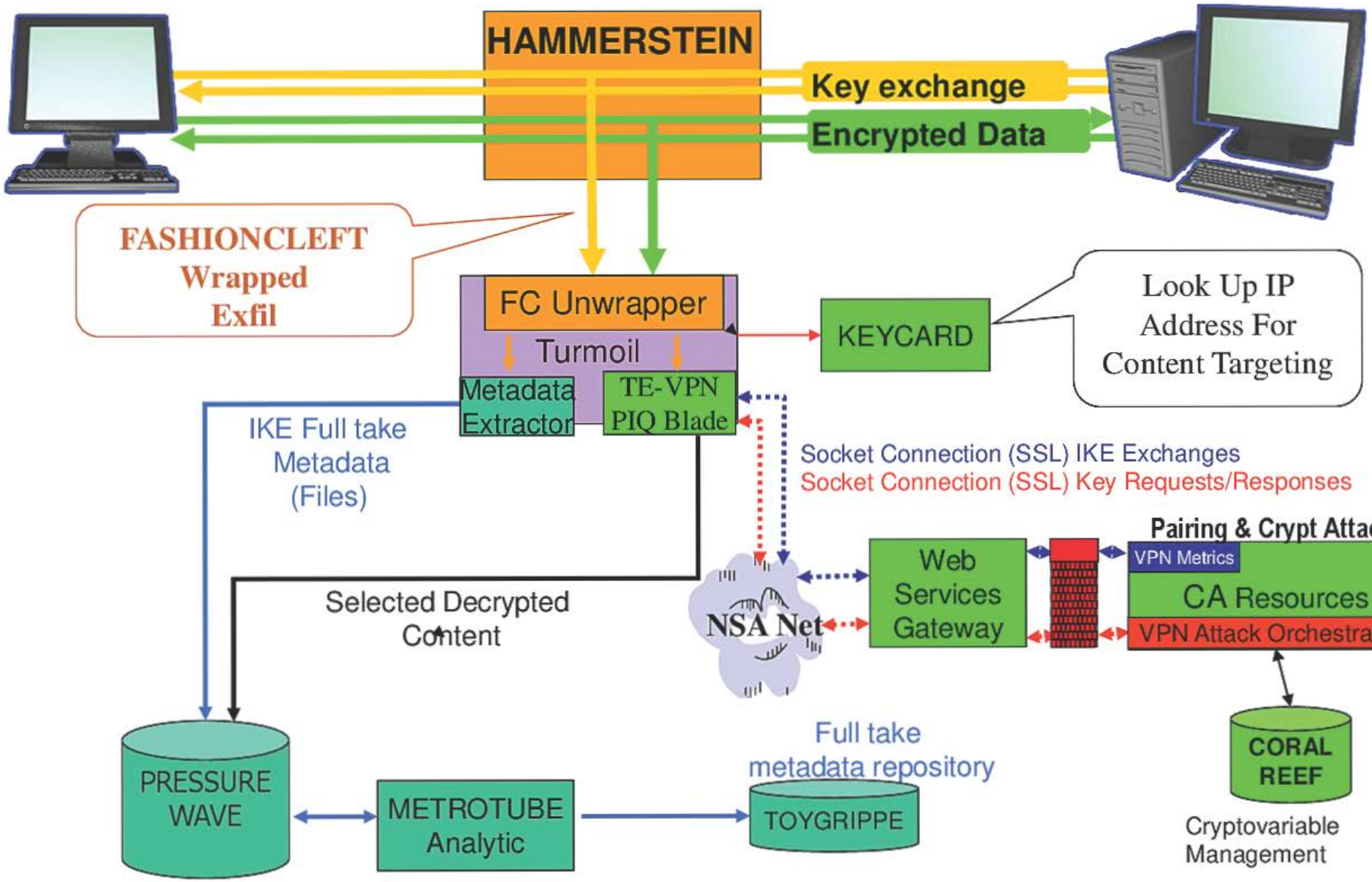
APEX VPN Phases

- **VPN Phase 1:** IKE Metadata Only (Spin 15)
  - IKE packets are exfiled to TURMOIL APEX.
  - APEX reconstructs/reinjects IKE packets to the TURMOIL VPN components.
  - TURMOIL VPN extracts metadata from each key exchange and sends to the CES TOYGRIPPE metadata database. This database is used by SIGDEV analysts to identify potential targets for further exploitation.
- **VPN Phase 2:** Targeted IKE Forwarding (Spin 15)
  - TURMOIL VPN looks up IKE packet IP addresses in KEYCARD.
  - If either IP address is targeted, the key exchange packets are forwarded to the CES Attack Orchestrator (POISON NUT) for VPN key recovery.
- **VPN Phase 3:** Static Tasking of ESP
  - HAMMERSTEIN receives static tasking to exfil targeted ESP packets.
  - APEX reconstructs/reinjects ESP packets to the TURMOIL VPN components.
  - TURMOIL VPN requests VPN key from CES and attempts decryption.
- **VPN Phase 4:** Dynamic Targeting of ESP
  - Based on the value returned by KEYCARD, the ESP for a particular VPN may be targeted as well.
  - TURMOIL sends to HAMMERSTEIN (via TURBINE) the parameters for capturing the ESP for the targeted VPN.

APEX VoIP Phases

- **VoIP Phase 1:** Static Tasking of VoIP (Spin 16)
  - HAMMERCHANT monitors VoIP SIP/H.323 signaling and exfiltrates only targeted VoIP RTP sessions to TURMOIL.
  - APEX reconstructs and bundles the voice packets into a file, attaches appropriate metadata, and delivers to PRESSUREWAVE.
  - This triggers a modified VoIP analytic to prepare the VoIP for corporate delivery.
- **VoIP Phase 2.** VoIP Call Survey
  - HAMMERCHANT monitors VoIP SIP/H.323 signaling and exfiltrates all call signaling metadata to TURMOIL.
  - APEX inserts call signaling metadata into an ASDF record and publishes it to the TURMOIL AsdfReporter component for target SIGDEV.
- **VoIP Phase 3.** Dynamic Targeting of VoIP
  - HAMMERSTEIN captures/exfils all VoIP signaling
  - APEX reconstructs/reinjects the signaling to the TURMOIL VoIP components.
  - TURMOIL VoIP extracts call metadata and sends to FASCIA; checks KEYCARD for hits.
  - If called/calling party is targeted for active exfil, then TURMOIL sends to HAMMERSTEIN (via TURBINIE) the parameters to capture the targeted RTP session.
- Implementation of VoIP Phase 2 and 3 will be driven by mission need.
  - Phase 3 leverages all TURMOIL VoIP signaling protocol processors to expand beyond SIP and H.323 (e.g. Skype) without additional development on the implant.

APEX VPN Exploitation



APEX VoIP Exploitation