

TECHNOLOGY ARCHITECTURE: SECURITY INTELLIGENCE PLATFORM FOR BLOCKCHAIN (SIPB)

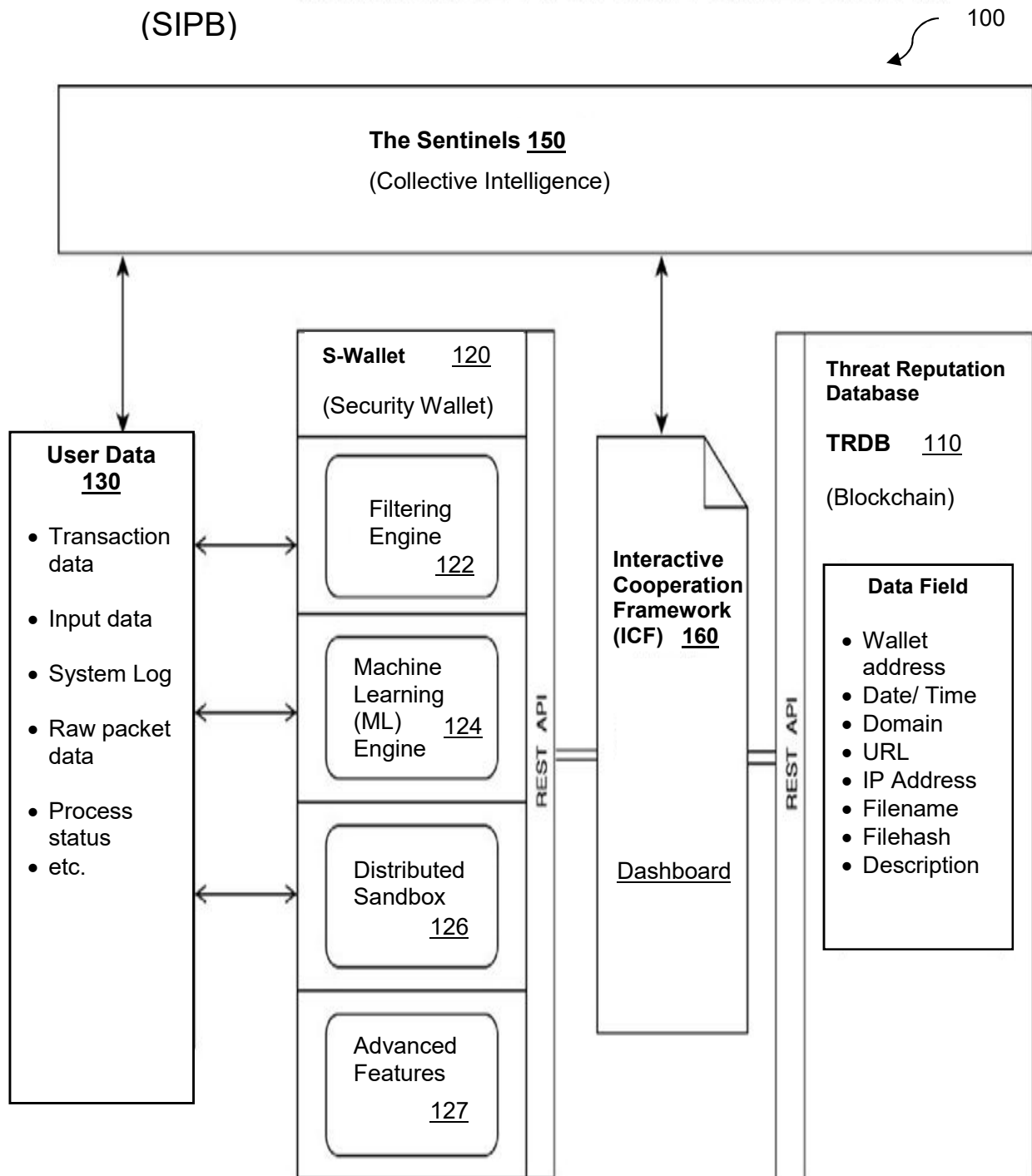


Figure 1

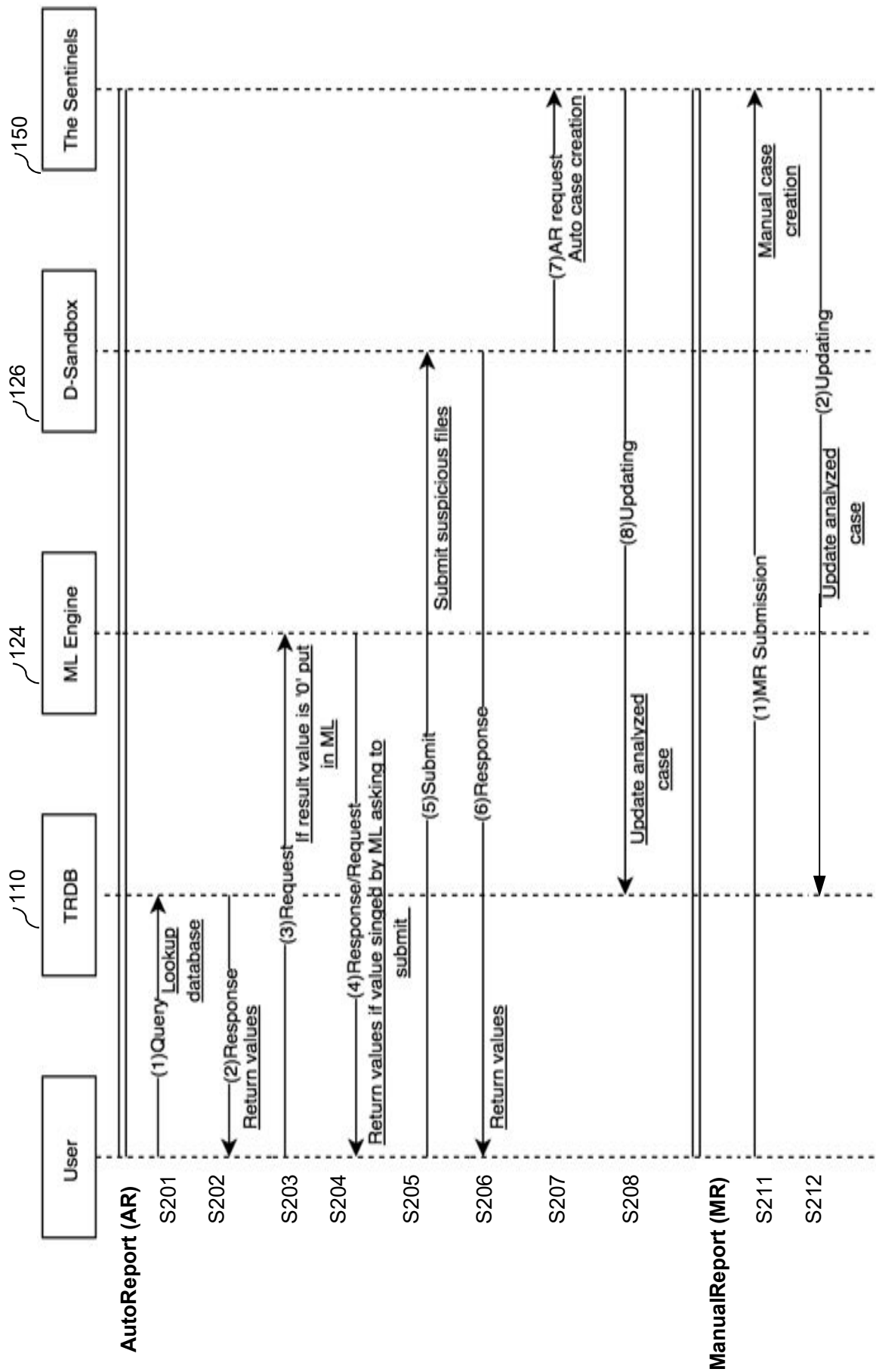


Figure 2: Security Intelligence Platform for Blockchain (SIPB) Process Flow

HIGH LEVEL CONSENSUS DIAGRAM

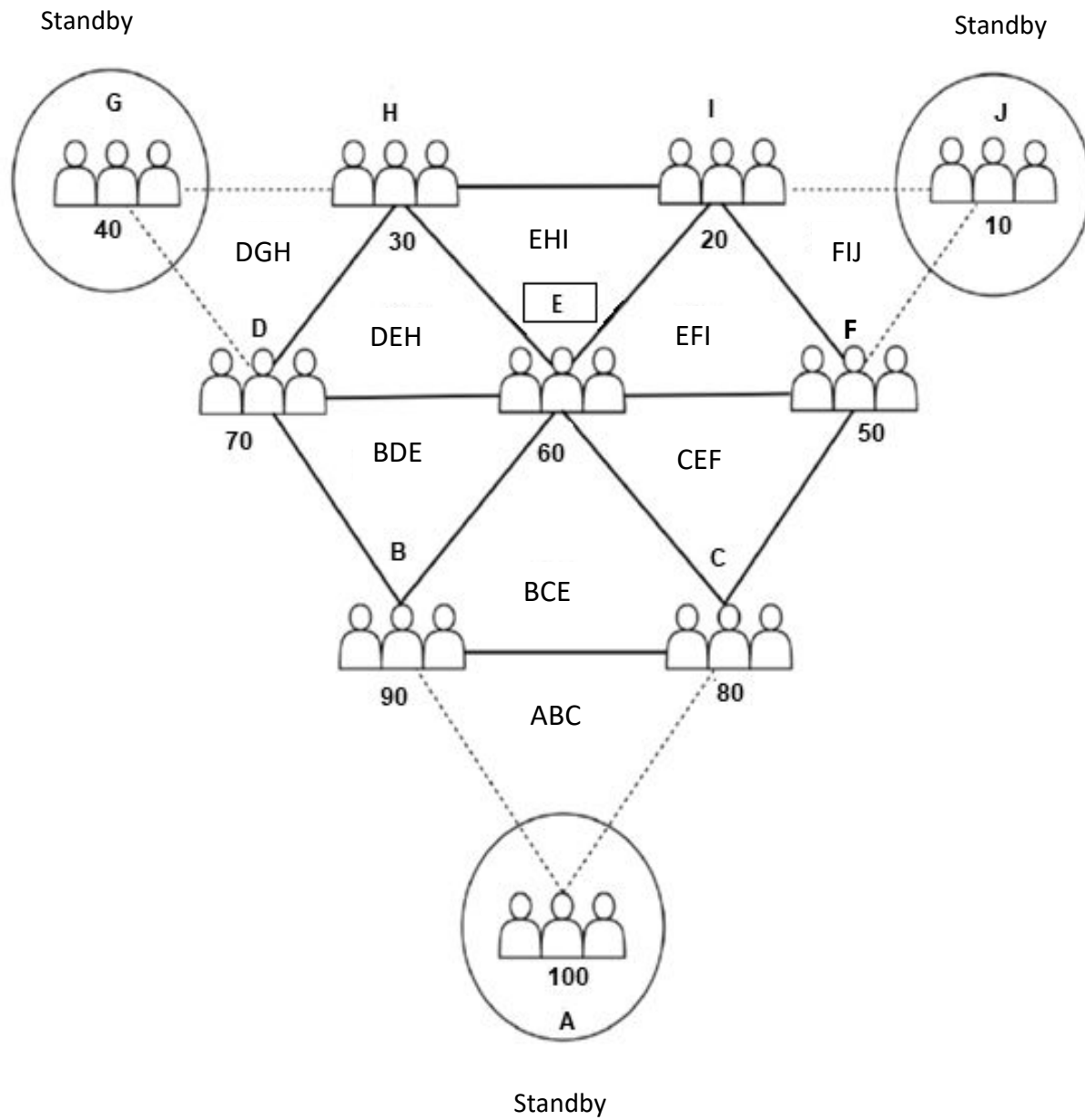


Figure 3

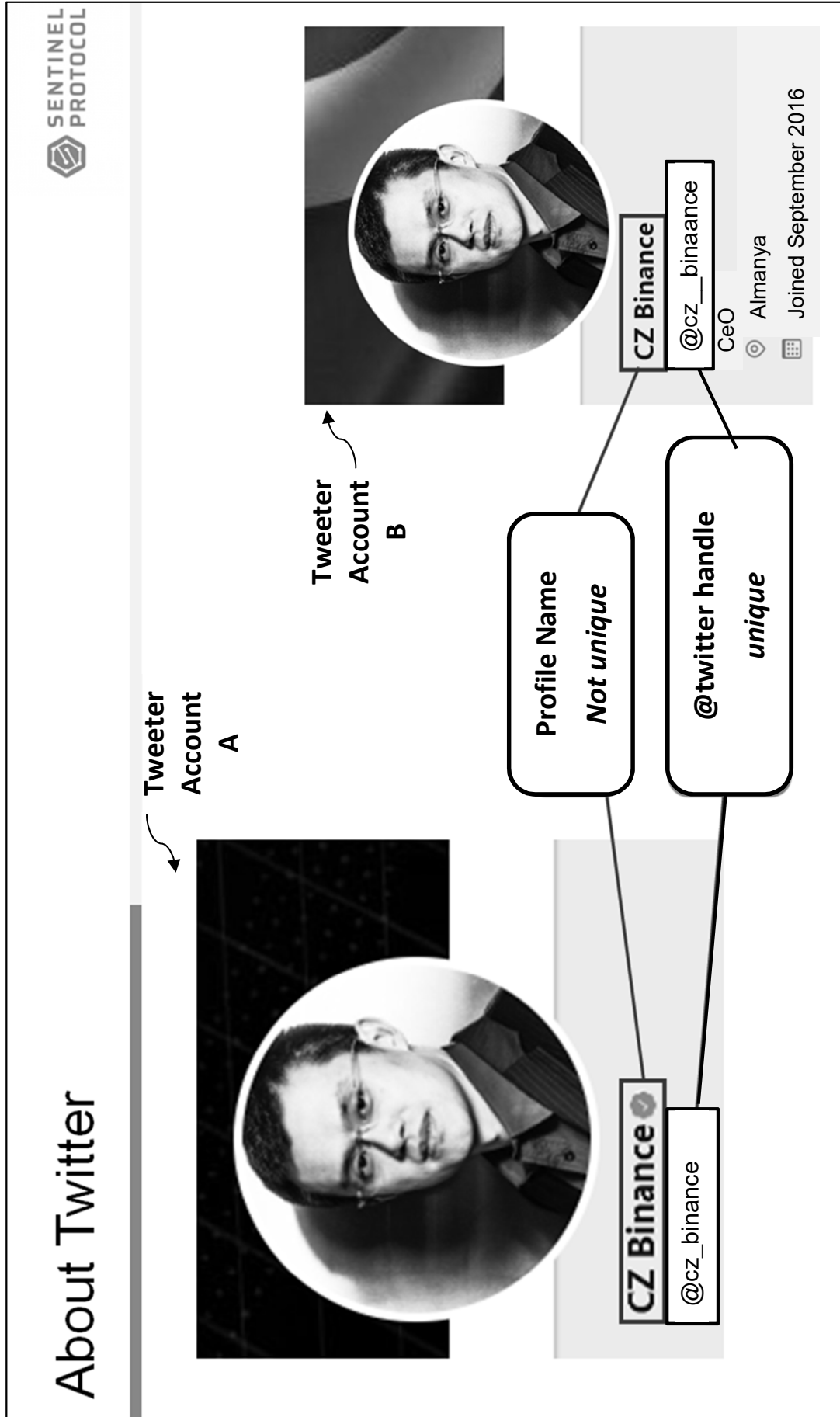


Figure 4

Issue: Twitter filled with malicious actors carrying out phishing

CZ Binance  **@cz_binance** Sep 18
Everywhere! 502

kilo @cryptopago
¡A todos nuestros amigos de Binance! Los esperamos hoy para conversar temas crypto, blockchain y el primer Hackaton en CA.
¡Prepara tus preguntas para @binance!...

8 9 69

CZ  **@kirsworktarri11** 504
Replying to **@cz_binance** 502

Follow

Big Airdrop.

NEW PROMOTION FOR OUR SUBSCRIBER
THANKS FOR YOUR SUPPORT
VISIT THIS LINK FOR MORE INFO

10.000 ETHERS + 1.000 BTC

SPONSORS: VITALIK BUTERIN

GET IT NOW! 10,000ETH+1,000BTC giveaway for followers
Thank you for your support! Click here to get yours! Don't miss you chance to get up to 200ETH or 50BTC
buterintoday.eu

2:28 AM - 18 Sep 2018 505

Figure 5A

Issue: Twitter filled with malicious actors carrying out phishing



Justin Sun · 20h ✓

Replying to [@justinsuntron](#) 502

On the more important note. Read message below!

1 5 10 506



Justin Sun · 20h ✓

Check this. twitter.com and youtube.com sponsored this event



We are giving back to the community with
ETHEREUM

10,000 ETH giveaway

Send 0.5-20 ETH to verify your address and get 5-200 ETH back (x10)
... If more than 5 ETH sent your benefit will be increased to x20!

SPONSORED:   

10,000 ETH Giveaway! – ETH Giveaway – Medium

Send 0.5–20 ETH to address and get 5–200 ETH back(x10)! If more than 5 ETH sent your profit will be increased to x20! Offer is limited!

medium.com

1 4 8 507



Justin Sun · 20h ✓

To participate just send 1-5 eth to the adress and you will get 10-50 back (multiplied x10) If more than 5 sent, your bonus will be increased to x20.

505

Figure 5B



Figure 6A

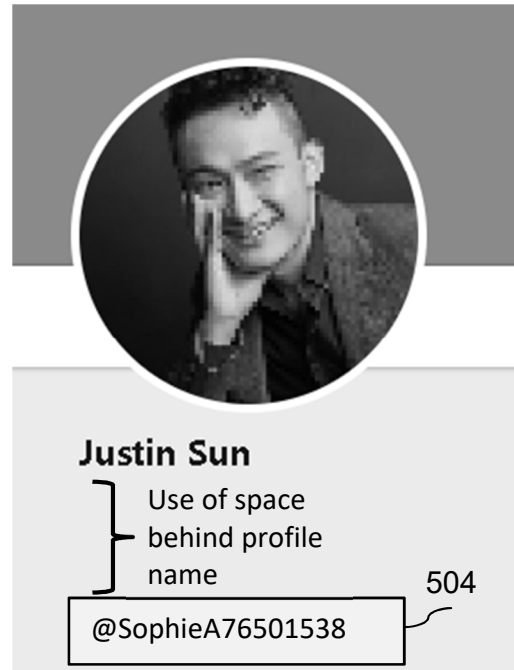


Figure 6B



Figure 6C



- ① Omission of Characters
- ② Visually similar letters (e.g. *n* VS *m*)

Figure 7

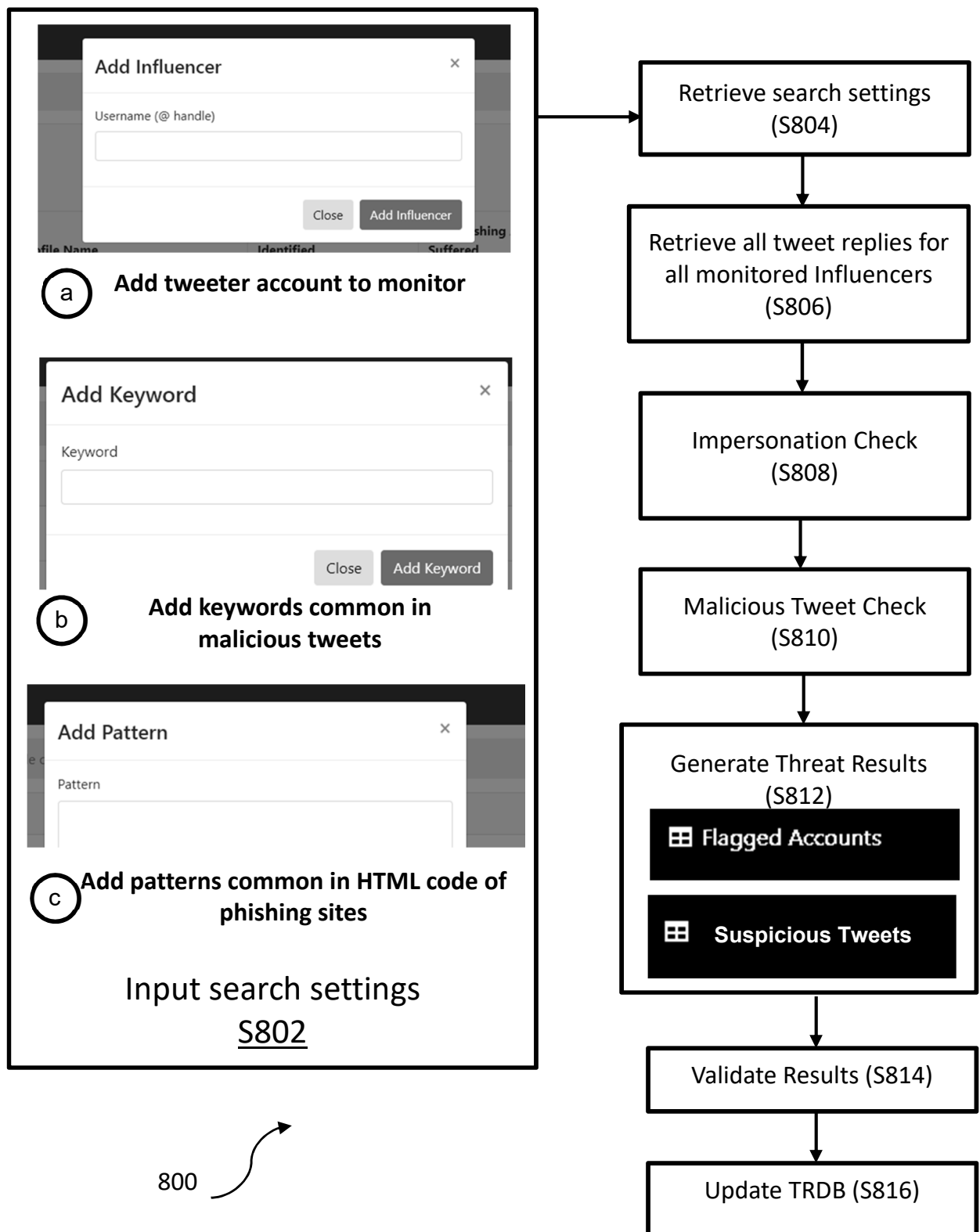


Figure 8A

Phishing & Impersonation Detection System

Backend: How ensure all new tweets available through Search API are retrieved



Influencer Object

Each influencer object has "lastRetrievedID" (Tweet ID of the latest retrieved tweet)

```
mentions = api.GetSearch(term="@ " + username, result_type="recent", include_entities=True,
count=100, since_id=int(sinceValue))
```

- Use twitter-python API's "GetSearch" method with "since_id"* parameter.
- Assign lastRetrievedID = tweet ID of latest retrieved tweet (i.e. largest tweet id out of all tweets returned)



Recursion used till GetSearch returns 0 mentions.

*since_id: Returns results with an ID greater than (that is, more recent than) the specified ID.

Figure 8B

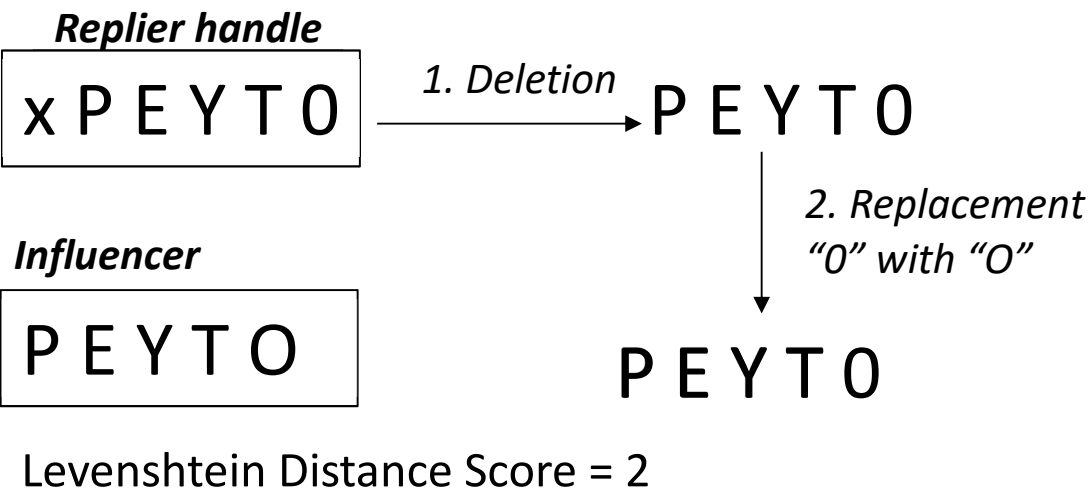
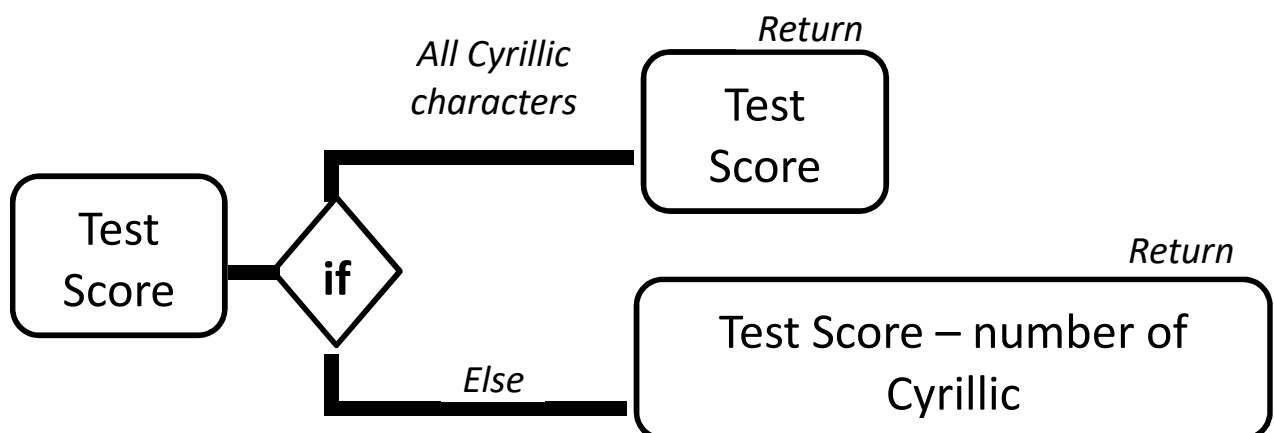
Step 808: Similarity Test (Done through Levenshtein Distance)

Figure 8C

Step 808: Similarity Test (Check for Cyrillic Characters)*Real Profile Name***Vitalik Non-giver of Ether***Fake Profile Name***Vitalik Non-giver of Ether**

If returned test score $\leq$ threshold, strings are more similar (to flag repplier account as potential impersonator).

Figure 8D

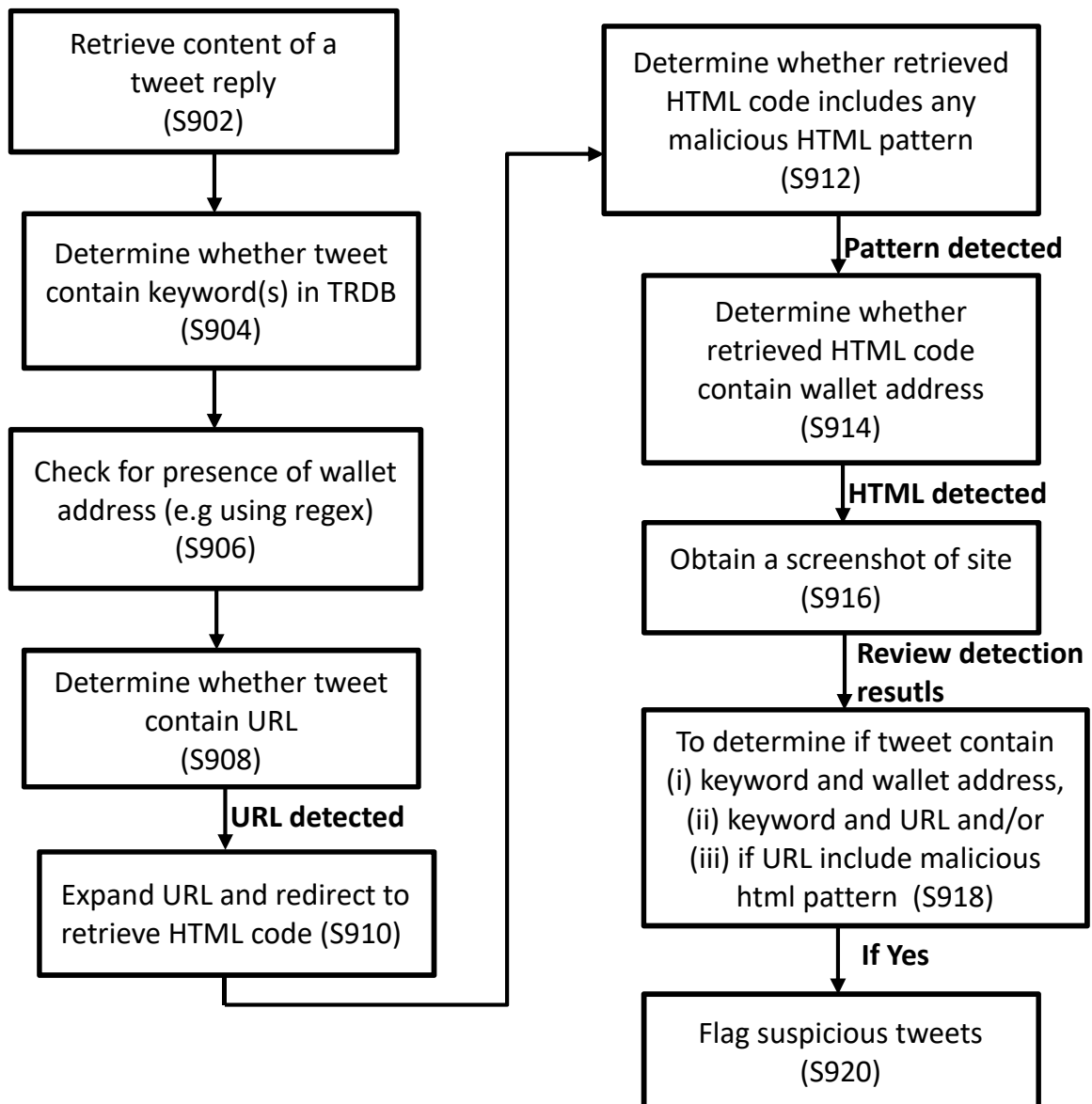
Step 810: Malicious Tweet Check

Figure 9

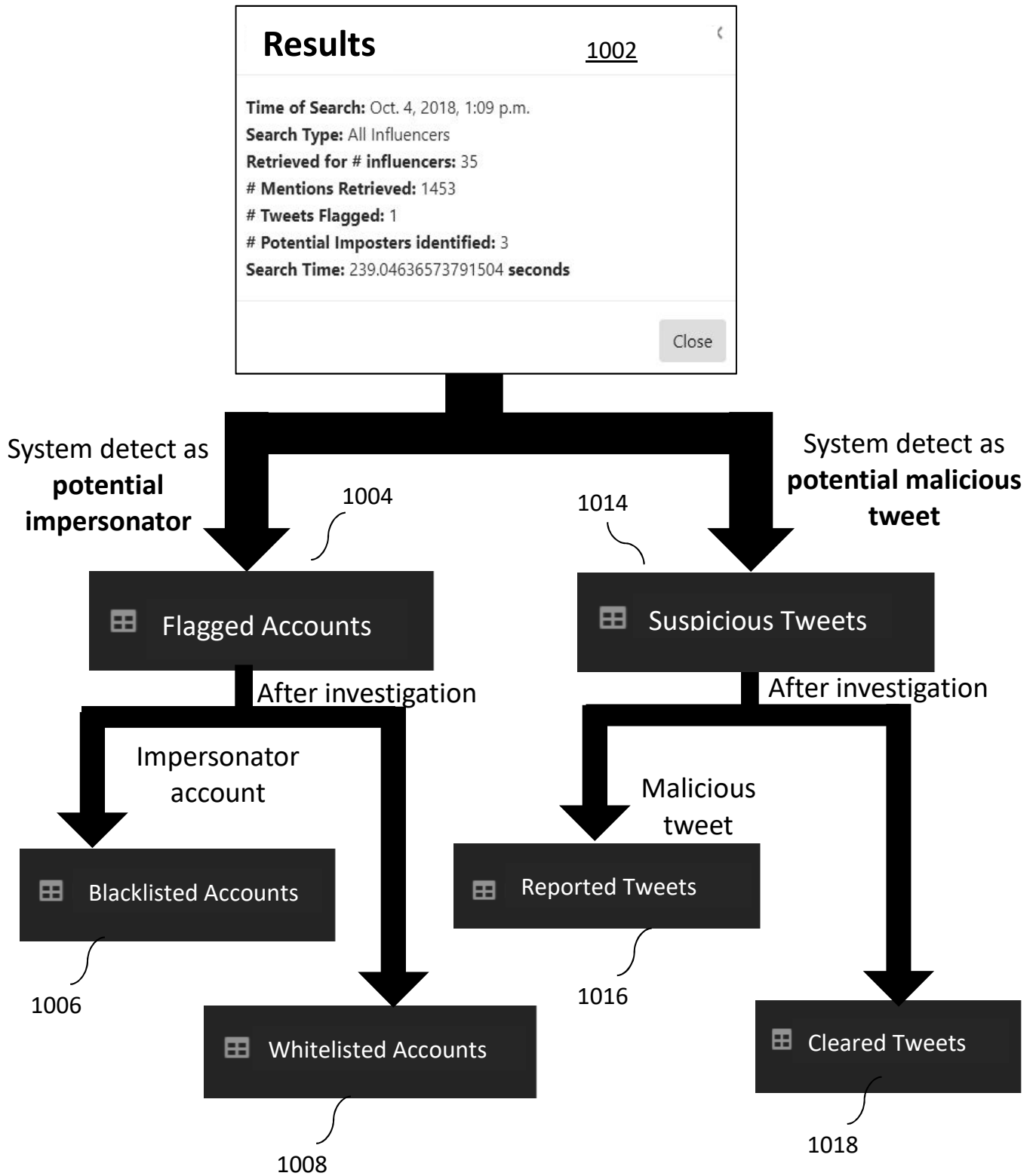
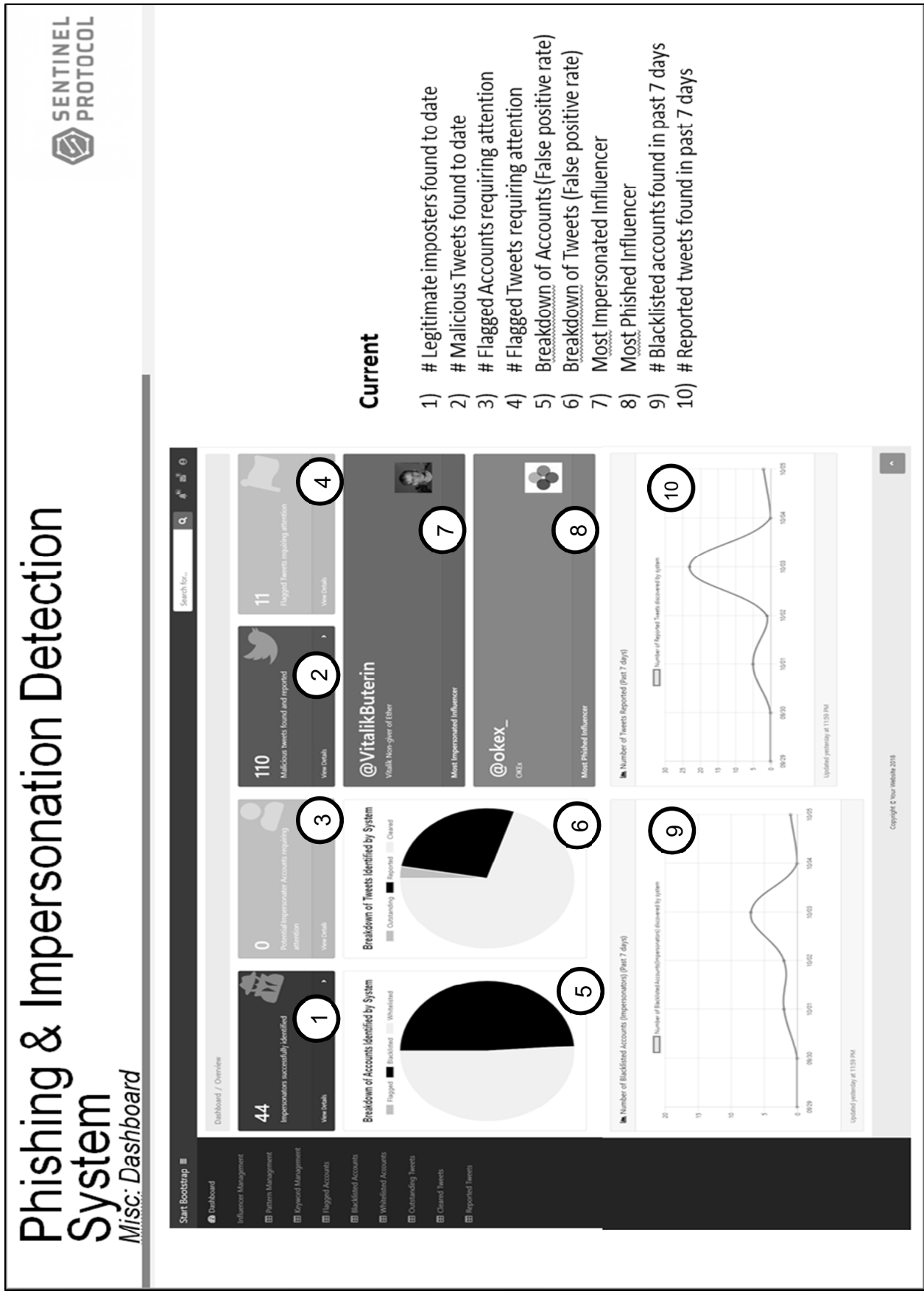


Figure 10A



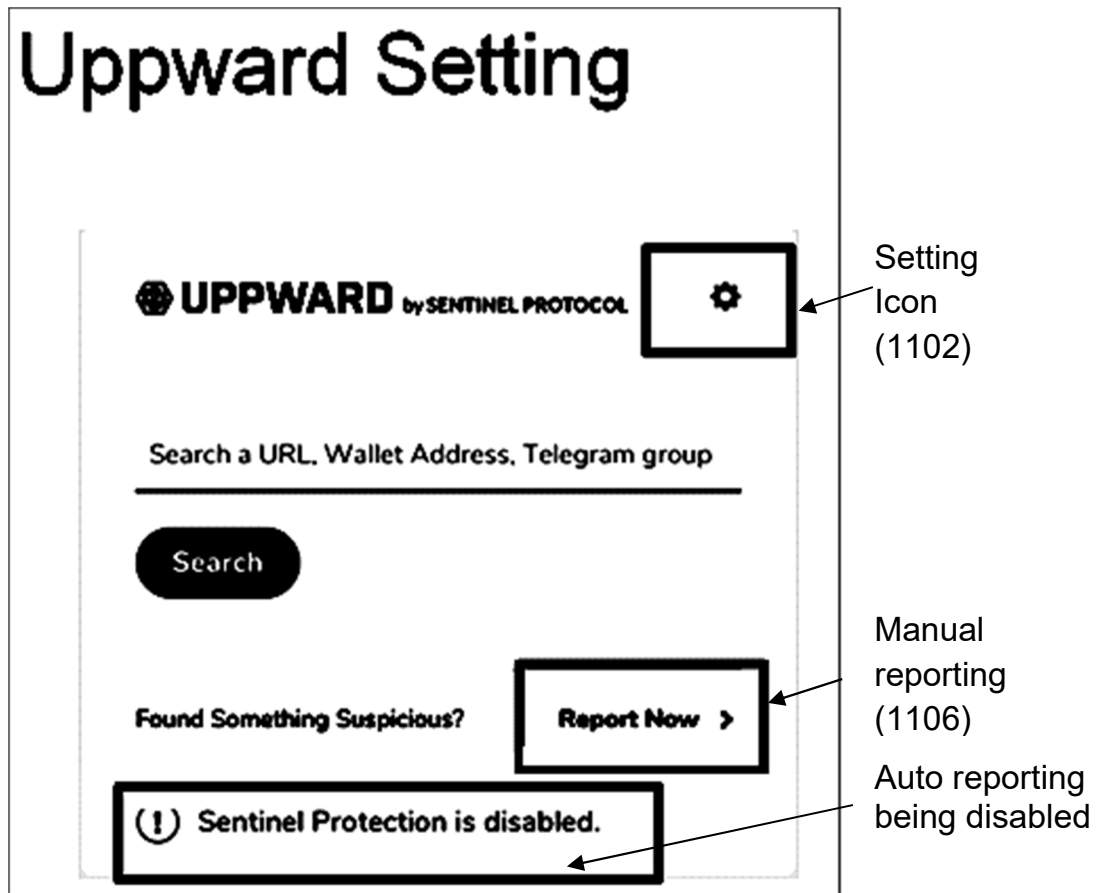


Figure 11

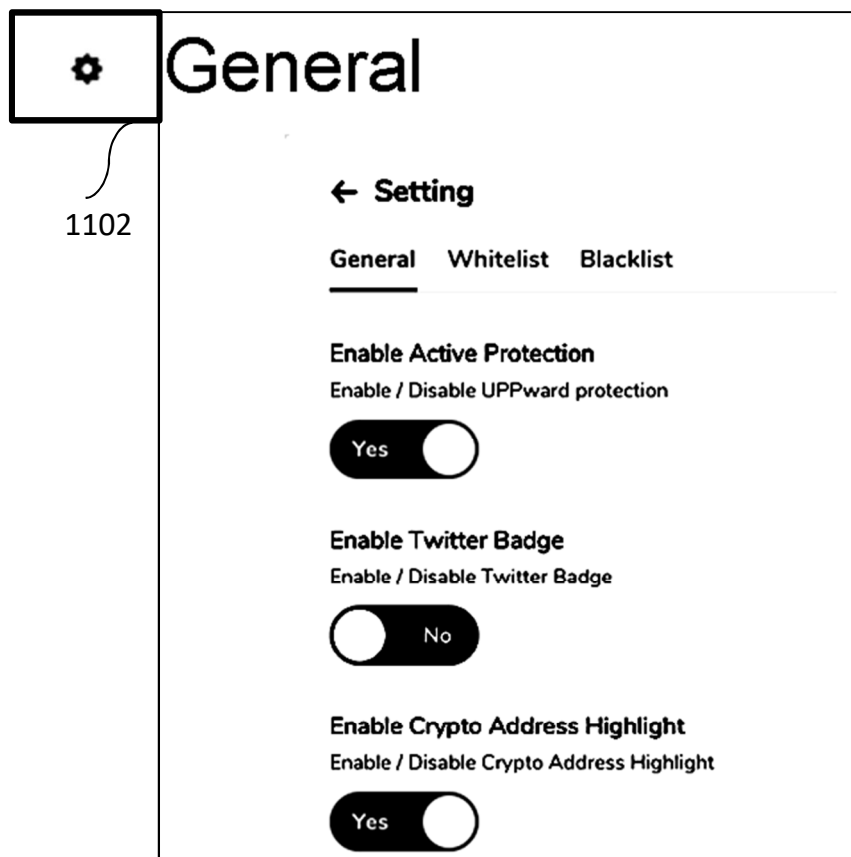


Figure 12

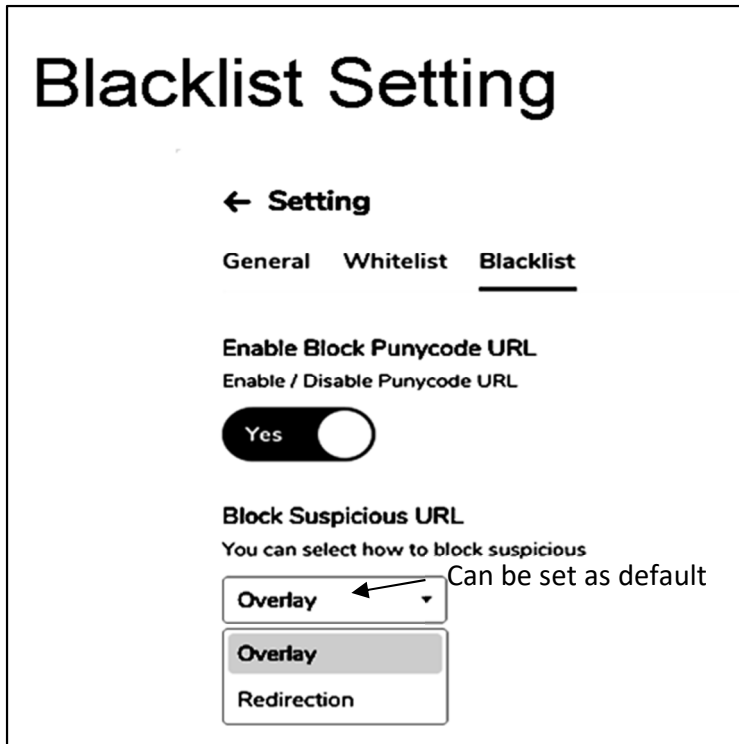


Figure 13

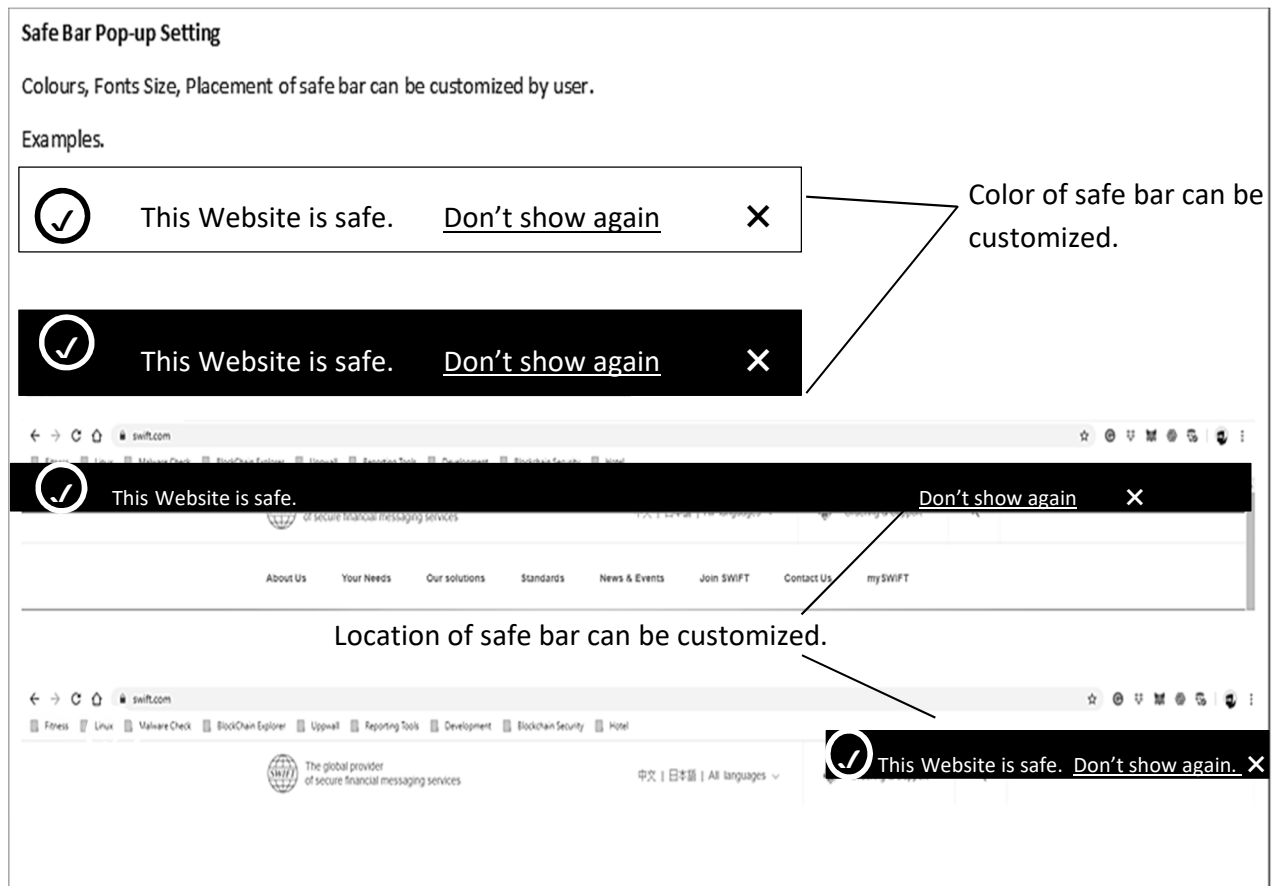


Figure 15

Whitelist Setting

The figure displays three screenshots of the 'Whitelist Setting' interface, illustrating different states of the 'Enable Alert' toggle and various configuration options.

Top Screenshot (Left): Shows the 'Whitelist Setting' screen with the 'Enable Alert' toggle set to 'Yes'. The 'Display Time (Sec)' is set to 5 Sec, and the 'Typeface Size' is 15 px. The 'Alert Layout Type' is set to 'Top'. The 'Background color' is selected as black. A red box highlights the 'Enable Alert' toggle, and an arrow points to the text 'Select colour for alert notification'.

Top Screenshot (Middle): Shows the 'Whitelist Setting' screen with the 'Enable Alert' toggle set to 'Yes'. The 'Display Time (Sec)' is set to 5 Sec, and the 'Typeface Size' is 13 px. The 'Alert Layout Type' is set to 'Top'. The 'Background color' is selected as black. A red box highlights the 'Enable Alert' toggle, and an arrow points to the text 'Toggle setting for activation/de-activation'.

Top Screenshot (Right): Shows the 'Whitelist Setting' screen with the 'Enable Alert' toggle set to 'No'. The 'Display Time (Sec)' is set to 5 Sec, and the 'Typeface Size' is 13 px. The 'Alert Layout Type' is set to 'Top'. The 'Background color' is selected as black. A red box highlights the 'Enable Alert' toggle, and an arrow points to the text 'Toggle setting for activation/de-activation'.

Bottom Screenshot (Left): Shows the 'Whitelist Setting' screen with the 'Enable Alert' toggle set to 'Yes'. The 'Display Time (Sec)' is set to 5 Sec, and the 'Typeface Size' is 15 px. The 'Alert Layout Type' is set to 'Top'. The 'Background color' is selected as black. A red box highlights the 'Background color' selection, and an arrow points to the text 'Select colour for alert notification'.

Bottom Screenshot (Middle): Shows the 'Whitelist Setting' screen with the 'Enable Alert' toggle set to 'Yes'. The 'Display Time (Sec)' is set to 5 Sec, and the 'Typeface Size' is 13 px. The 'Alert Layout Type' is set to 'Top'. The 'Background color' is selected as black. A red box highlights the 'Background color' selection, and an arrow points to the text 'Select colour for alert notification'.

Bottom Screenshot (Right): Shows the 'Whitelist Setting' screen with the 'Enable Alert' toggle set to 'Yes'. The 'Display Time (Sec)' is set to 5 Sec, and the 'Typeface Size' is 15 px. The 'Alert Layout Type' is set to 'Top'. The 'Background color' is selected as black. A red box highlights the 'Background color' selection, and an arrow points to the text 'Select colour for alert notification'.

Figure 14

Crypto Address Highlight

Withdrawals

ETH - Ethereum

Total balance: 3.40361548 ETH
In order: 0.00000000 ETH
Available balance: 3.40361548 ETH

Important

- Minimum withdrawal: 0.02 ETH
- Do not withdraw directly to a crowd/ICO address, as your account will not be credited with tokens from such sales.

ETH Withdrawal Address

0x1234567890123456789012345678901234567890

Amount

24h Withdrawal Limit: 0 / 2 BTC

Available: 3.40361548 ETH

Transaction Fee: 0.00000000 You Will Get: 0.00000000

Submit

Please note

- Once you have submitted your withdrawal request, we will send a confirmation email. Please then click on the confirmation link in your email.

History

Completed	EOS
Completed	EOS
Completed	ETH
Completed	ETH
Completed	ETH
Completed	ETH
Completed	ETH
Completed	ETH
Completed	ETH
Completed	ETH
Completed	QTUM
Completed	IOTA
Completed	LTC
Completed	QTUM
Completed	QTUM
Completed	ETC
Completed	NEO
Completed	ETH
Completed	BTC

Figure 16A

Crypto Address Highlight

Google

0xFBb1b73C4f0BDa4f67dca266ce6Ef42f520fBB98

전체 동영상 지도 뉴스 이미지 더보기 설정 도구

검색결과 약 73,700개 (0.47초)

Crypto Address (Safe) - in green

0xFBb1b73C4f0BDa4f67dca266ce6Ef42f520fBB98 - Ethereum ...

<https://etherscan.io/.../0xfbb1b73c4f0bda4f67dca266ce6ef42f520fbb98> 이 페이지 번역하기

Address: 0x7908e104AE43e5e6bAc2D3FdAAE3CCdF07eD8b8c8 Exchange: Home: Accounts; Address.

Sponsored: Datum Storage - Get 1TB cloud storage

BAT (BAT) Token Tracker - Etherscan...

<https://etherscan.io/.../0x0d8775f648430679a709e98d2b0cb6250...> 이 페이지 번역하기

Holder: 0x7908e104AE43e5e6bAc2D3FdAAE3CCdF07eD8b8c8 Price: \$0.1697 @ 0.001402 Eth (13.02%).

Balance: 143,887,307.94715542 BAT, Value ...

Account Bittrex (0xfbb1...) - etherchain.org - The Ethereum Blockchain ...

<https://www.etherchain.org/.../fbb1b73c4f0bda4f67dca266ce6ef42f520fbb98> 이 페이지 번역하기

Ethereum Account: 0x7908e104AE43e5e6bAc2D3FdAAE3CCdF07eD8b8c8

0x7908e104AE43e5e6bAc2D3FdAAE3CCdF07eD8b8c8, Transactions; History; Comments.

Ethplorer: Address: 0xfbb1b73c4f0bda4f67dca266ce6ef42f520fbb98

<https://ethplorer.io/.../0xfbb1b73c4f0bda4f67dca266ce6ef42f520fbb98> 이 페이지 번역하기

NEW. Widgets: API; Subscribe. search in progress... Address: 0x7908e104AE43e5e6bAc2D3FdAAE3CCdF07eD8b8c8, Internal operations. Chainry. URL. SHA256 Hash.

Figure 16B

Twitter badge

605 (in blue)

트윗 2,491 팔로잉 682 팔로워 641,107 마음에 들어요 258

트윗 트윗과 답글 미디어

Badge Alert 1705 (Good)
In Green

메인 트윗

Justin Sun @justinsuntron · 12월 7일
Join us at #niTRON2019! Be part of the #blockchain revolution there 🤖👉

트윗 번역하기

co, CA

년 8월

Figure 17A

Twitter badge

@justinsuntron

트윗 45 팔로잉 1 팔로워 8 마음에 들어요 1

트윗 트윗과 답글 미디어

Badge Alert 1705(Bad)
In Red

Justin Sun @justinsuntron님이 리트윗했습니다

Justin Sun @justinsuntron · 11월 17일
@justinsuntron 님이 Alert!
Thank you for this! This account is fake Musk

트윗 번역하기

1707

To celebrate 10-year BTC anniversary
We are giving back to Bitcoin community
1000 BTC

트윗하기

Figure 17B

Yobit.Net Retweeted



Yobit.Net @YobitExchange · Jan 14

Hackers sent back 122735 ETC coins, Thank you!

Proof: gastracker.io/tx/0x49eb0ce36...

gastracker.io/tx/0xe0dba59a6...

We added 43000 ETC (est 50 btc) to FreeCoins: yobit.net/en/freecoins/

New InvestBox for ETC (0.1% / daily): yobit.net/en/investbox/

116 86 216



Yobit.Net @Y0bitExchange_ · Jan 12

EBSP dev blocked, deps disabled for this token

1



Yobit.Net @Y0bitExchange_ · Jan 9

Liza denomination will be today. Please be ready for price drop/fly!

3 1 2



Yobit.Net @Y0bitExchange_ · Jan 9

Est 130417 ETC coins lost because of 51% attack.

It will be covered from Yobit Insurance fund, ETC deps/withdrawals enabled.

Hacker's ETC address: gastracker.io/addr/0xb71d9cd...

IP's: 2001:67c:2660:425:24:0:0:88e , 2001:67c:2660:425:b:0:0:cd7 (VPN)

Figure 18

Tweeter Overlay In Red
(indicating Untrusted
account tweets)

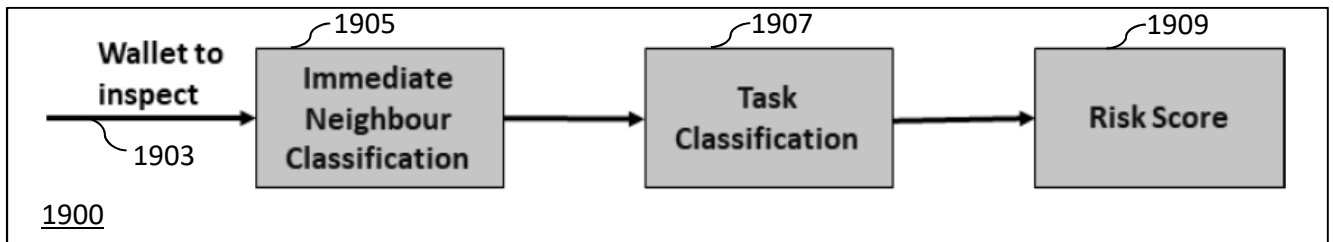


Figure 19A

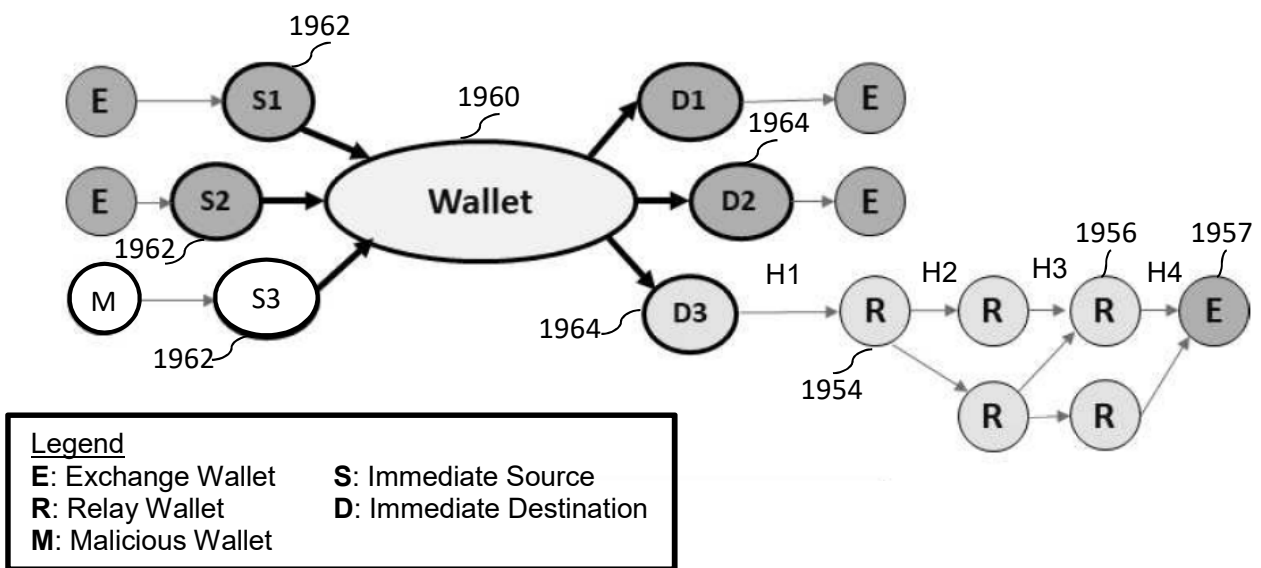


Figure 19B

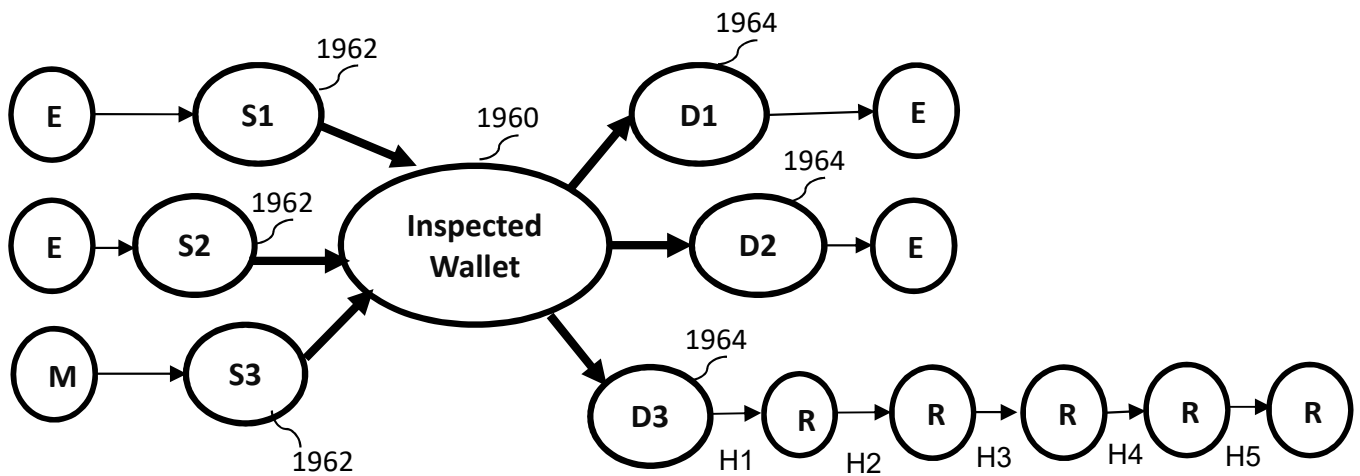


Figure 20A

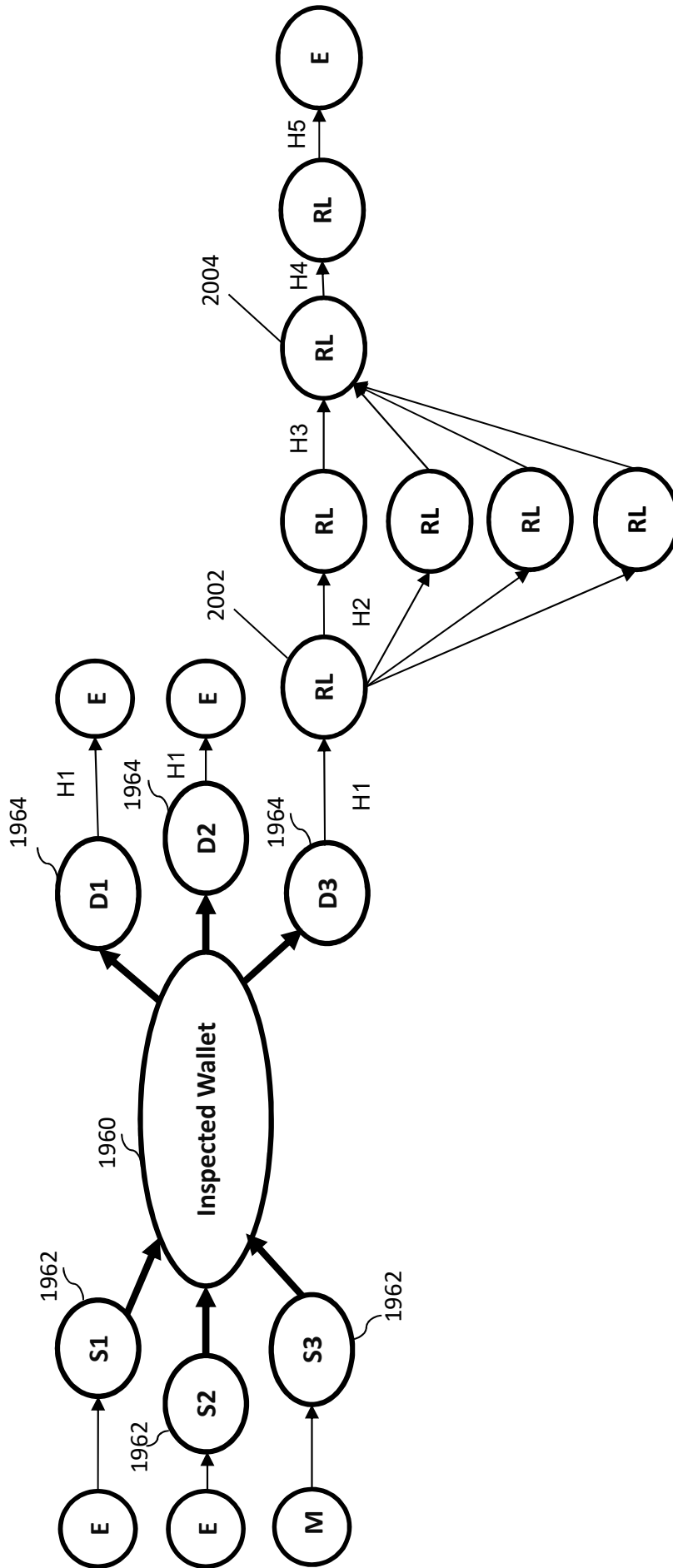
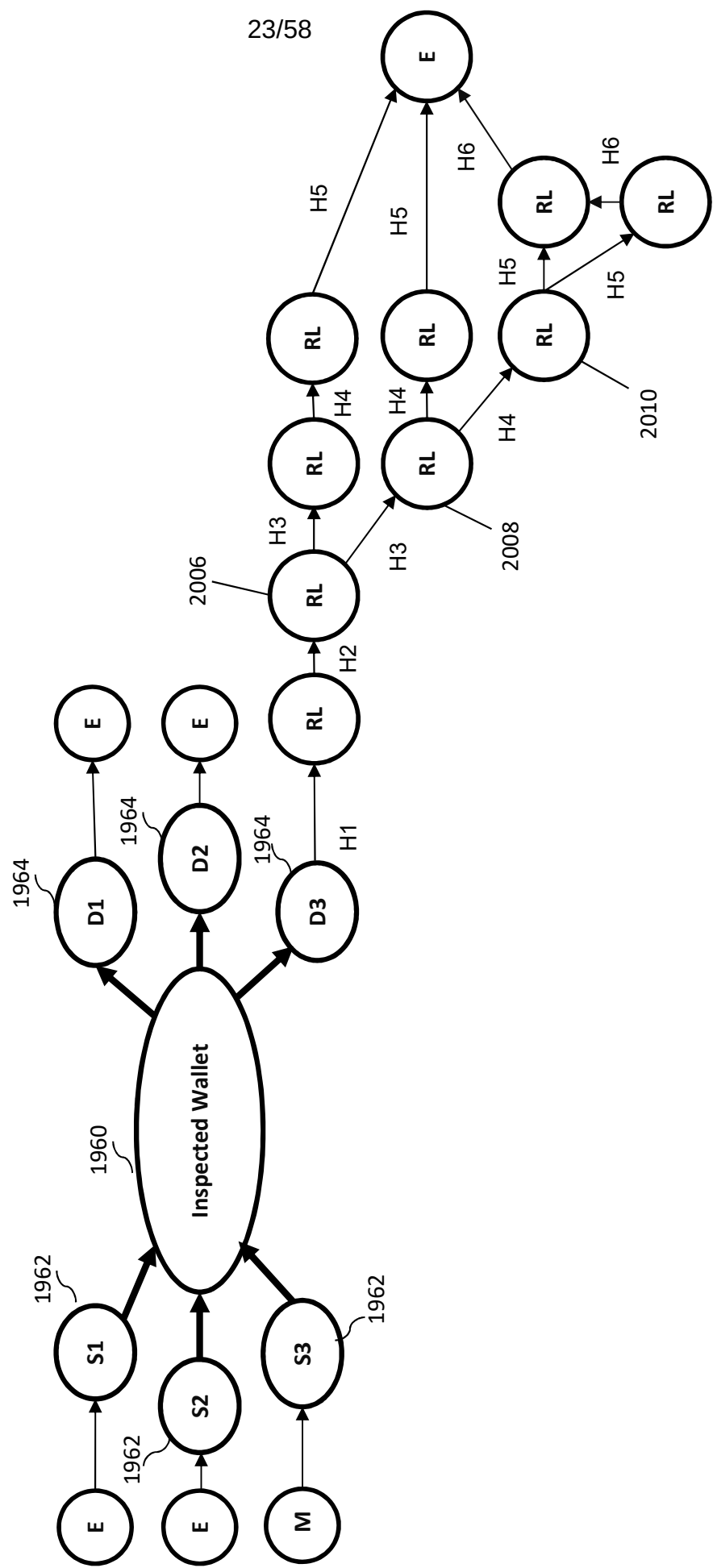


Figure 20B

Figure 20C



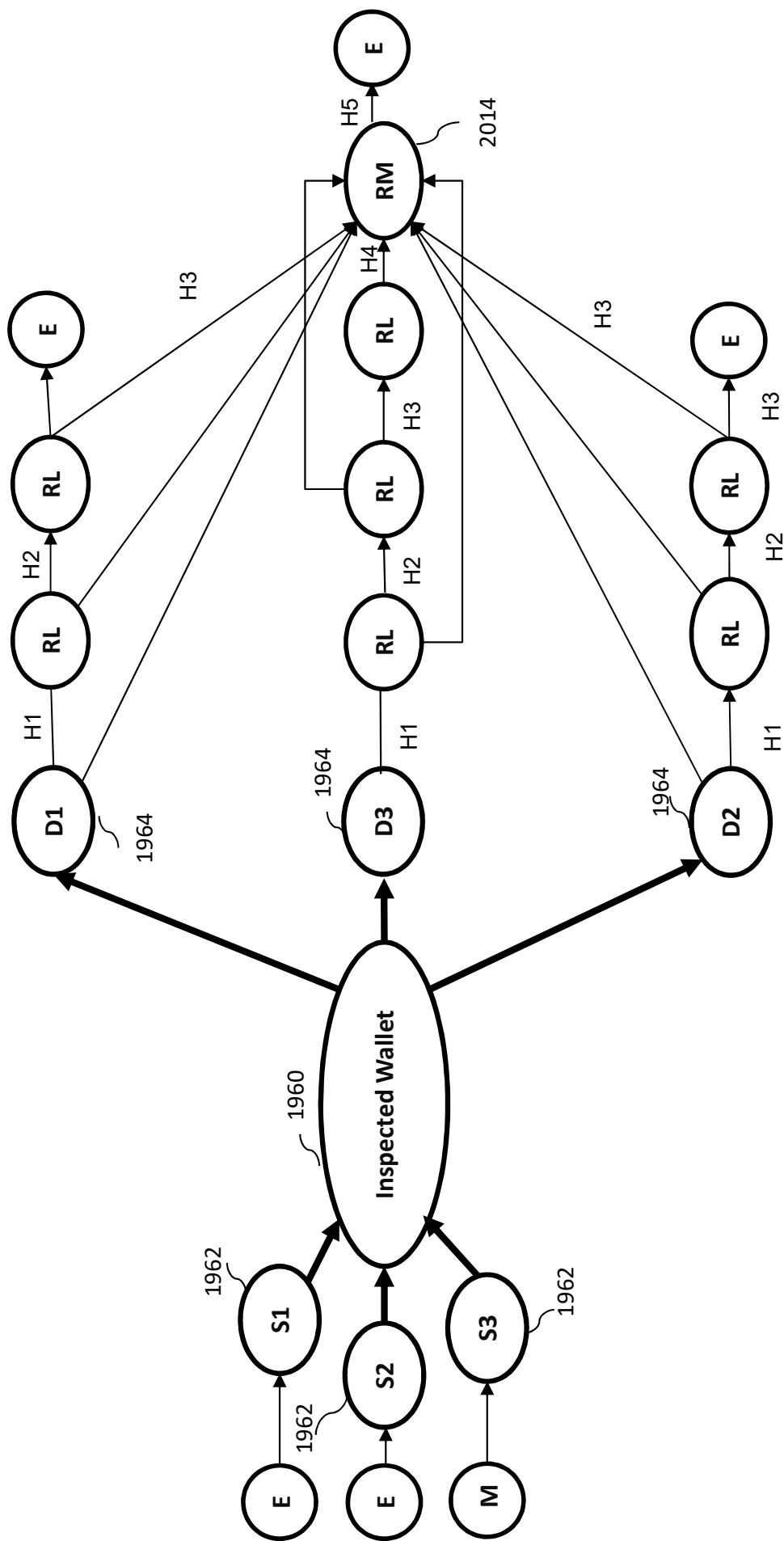


Figure 20D

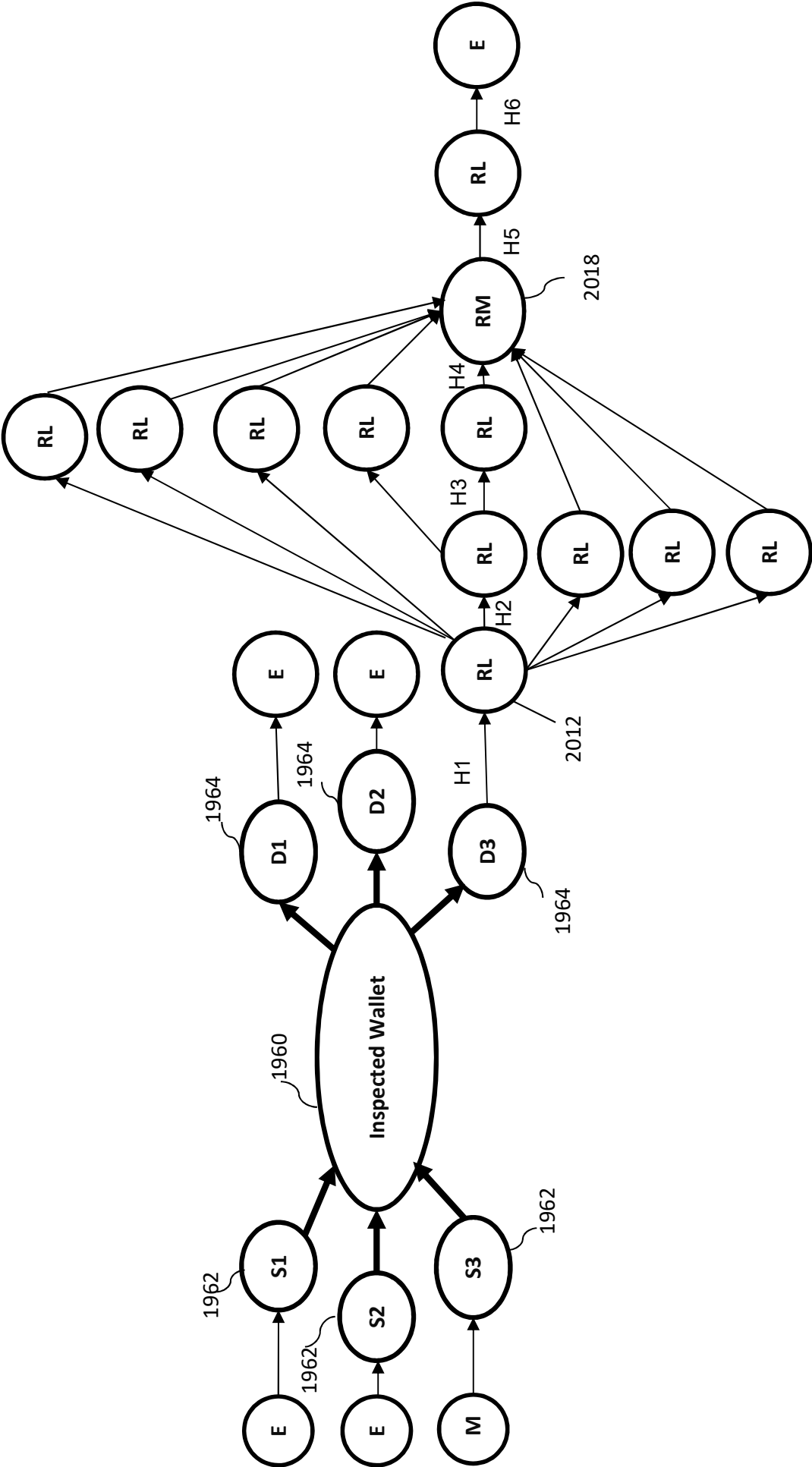
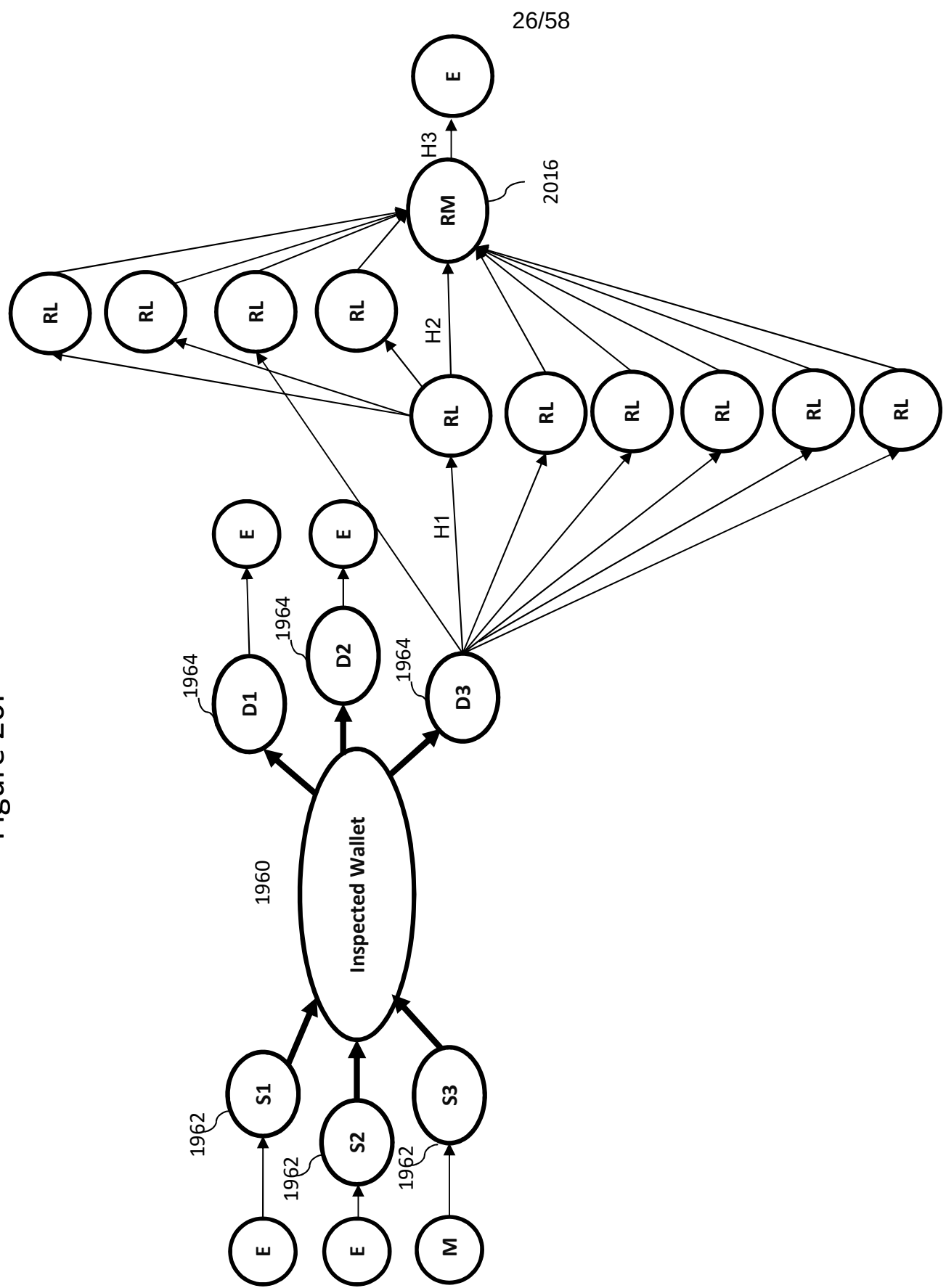
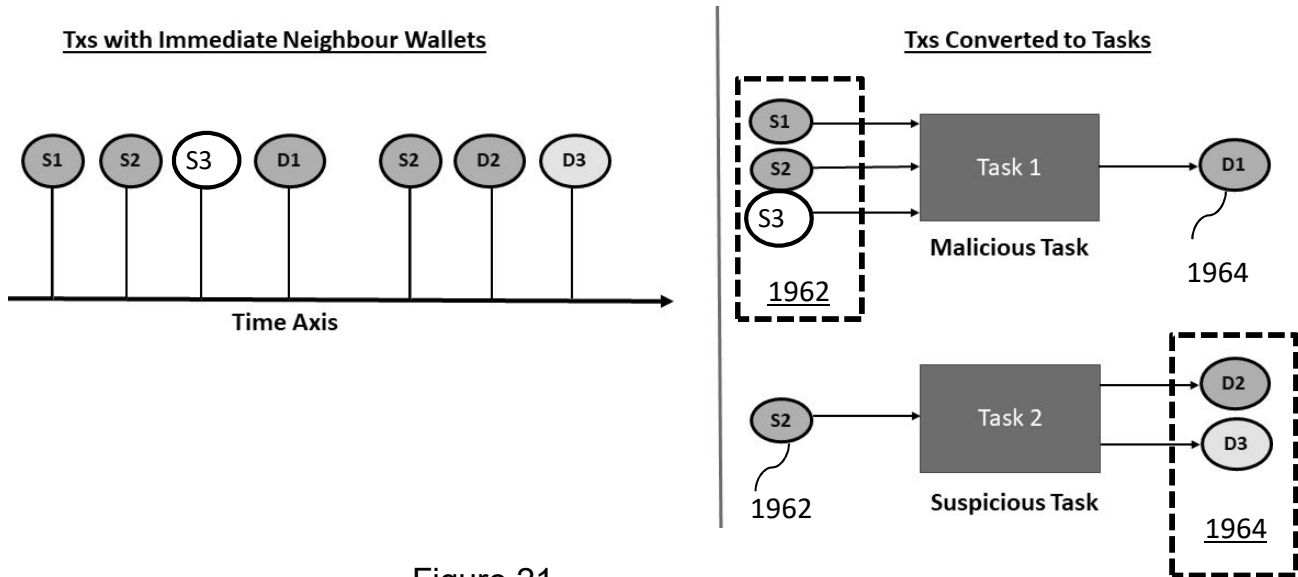


Figure 20E

Figure 20F





Computing Risk Score From Tasks

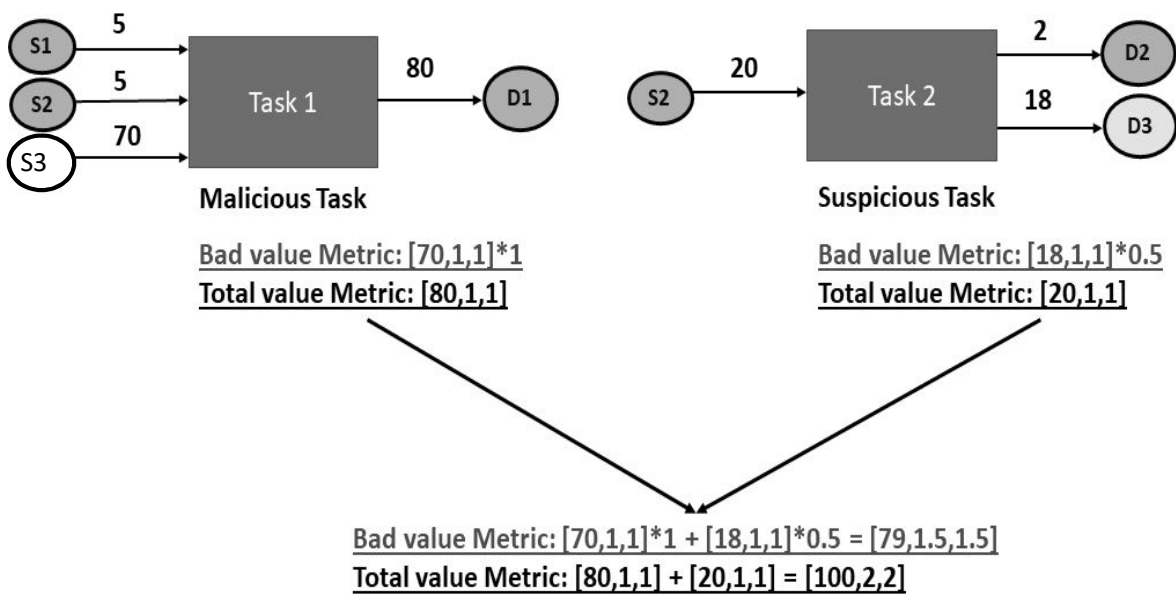


Figure 22

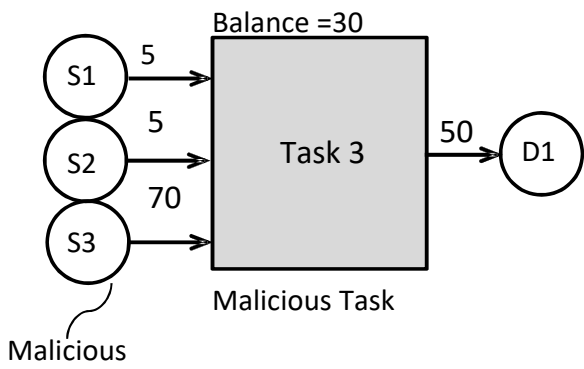


Figure 23A

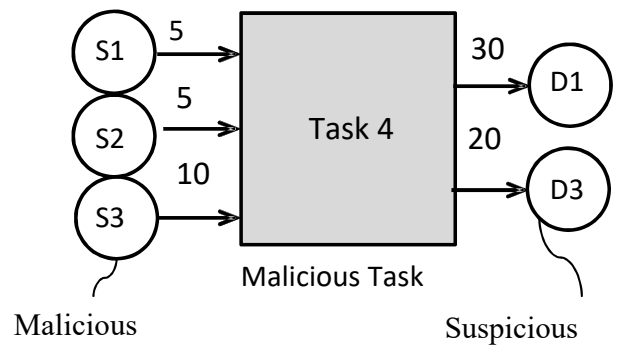


Figure 23B

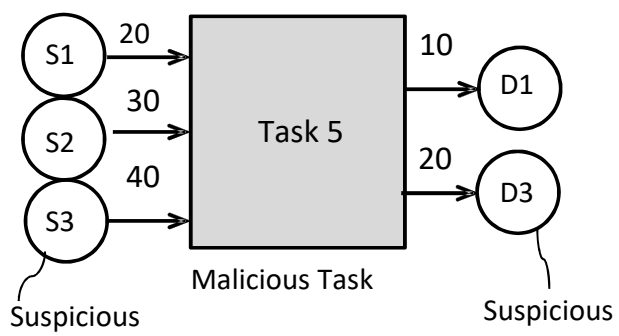


Figure 23C

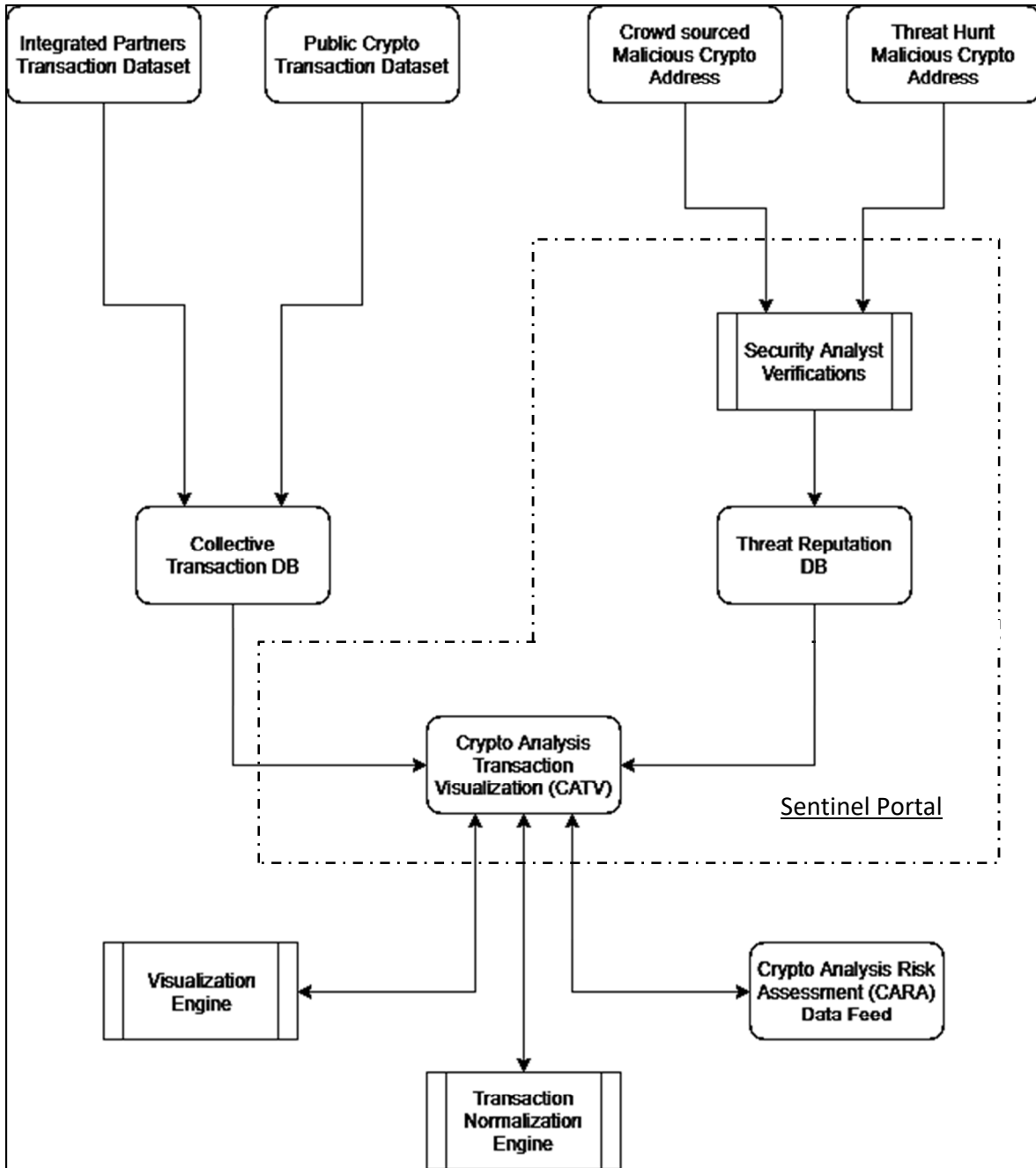


Figure 24: System Architecture of Crypto Analysis Transaction Visualization (CATV) Application hosted on Sentinel Portal (Gateway)

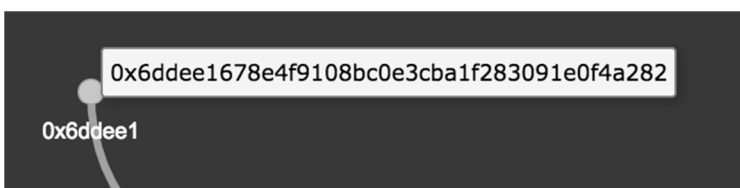


Figure 25: Mouse-over a node shows full address of the node.

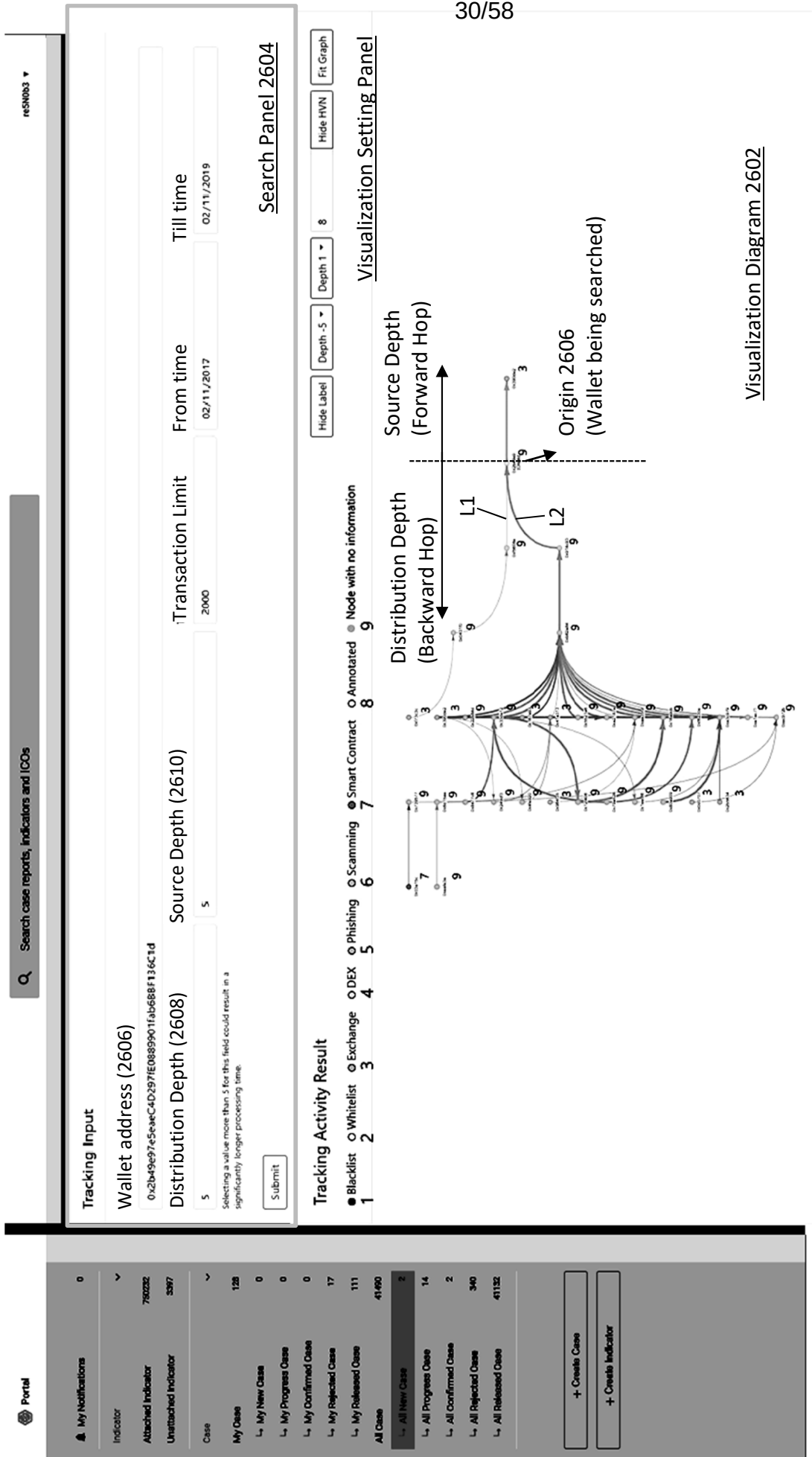


Figure 26: Visualization flow of transactions of a crypto wallet address being searched.

Portal

My Indicators

INDICATOR

Attached Indicator

Unattached Indicator

762222

2077

Case

My Cases

My New Cases

My Program Cases

My Confirmed Cases

My Requested Cases

My Indicated Cases

All Cases

All New Cases

All Program Cases

All Confirmed Cases

All Requested Cases

All Indicated Cases

+ Create Case

+ Create Indicator

Search case reports, indicators and ICOs

response

Transaction (97)

Depth ↓	Transaction ↓	From ↓	To ↓	Sender Annotation ↓	Receiver Annotation ↓	Value ↓	Date ↓
1	Oxcac463fdb...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	-	Upbit, Exchange Wallet	1	2018-04-05 08:54
1	Oxc627710786...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	-	Upbit, Exchange Wallet	0.8	2018-04-23 05:29
1	Oxa20bce152ff...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	-	Upbit, Exchange Wallet	516.99	2018-05-10 05:19
-1	Oxad11d8add9...	(Wallet) 0xf5608ee0f3bdd4d2ead4c17fcae5...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	-	-	1	2018-04-05 08:28
-1	Ox31a343e2f6...	(Wallet) 0xf5608ee0f3bdd4d2ead4c17fcae5...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	-	-	0.8	2018-04-23 05:07
-1	Ox1154ce66d4...	(Wallet) 0x914c93f617137424957bcf508f9...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	-	-	0.1	2018-05-10 04:50
-1	Ox882a13ae28...	(Wallet) 0x914c93f617137424957bcf508f9...	(Wallet) 0x2b49e97e5eaec4d297fe088990...	-	-	516.89	2018-05-10 04:58
-2	Ox32ab379c64...	(Wallet) 0x0431f0c4d8075e76bab00b3393a...	(Wallet) 0xf5608ee0f3bdd4d2ead4c17fcae5...	-	-	1.8	2018-04-05 08:20
-2	Ox8b5144a101...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	(Wallet) 0x914c93f617137424957bcf508f9...	-	-	516.99	2018-04-30 03:08
-3	Ox0dd407e6e5...	(Wallet) 0xf73c3c65bde10bf26c2e1763104...	(Wallet) 0x0431f0c4d8075e76bab00b3393a...	Exchange, Excha...	-	1.8	2018-04-05 08:18
-3	Oxc29bd9ae4a1...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	Upbit, Exchange ...	-	0.17	2018-04-20 10:10
-3	Ox3fe8e0ac7...	(Wallet) 0x22b84d5f1ea8b801c0422afe752...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	-	-	5	2018-04-21 03:17
-3	Oxd9e2e28edd...	(Wallet) 0x22b84d5f1ea8b801c0422afe752...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	-	-	1	2018-04-21 04:03
-3	Ox3a486c911e...	(Wallet) 0x33de12b5cf336692c6b7c6d3aaf...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	-	-	5	2018-04-22 05:27
-3	Oxd4ca45e0fd...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	Upbit, Exchange ...	-	5	2018-04-22 09:43
-3	Oxd166c4d2fd...	(Wallet) 0x167a9333b1582556f35b94d16a...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	Coinone, Exchan...	-	5	2018-04-22 10:32
-3	Ox8f761ad8e3...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	Upbit, Exchange ...	-	43	2018-04-22 07:19
-3	Ox2f0c8ed7269...	(Wallet) 0x390de26d772d2e2005c6d1d24a...	(Wallet) 0xb62a84f3f9dec9d7f307acaec1c...	Upbit, Exchange	-	12	2018-04-23 08:50

Figure 27: Transaction table showing search results of all nodes involved with a crypto wallet address being searched.

Wallet address (2606)

Enter the wallet address you wish to track.

(No. of Forward Hops)	(No. of Backward Hops)				
Distribution depth	Source depth	Transaction limit	From time	Till time	
5	0	2000	01/01/2011	28/03/2011	
Selecting a value more than 5 for this field could result in a significantly longer processing time.					
Submit					

Search Panel 2604

Figure 28: Search panel

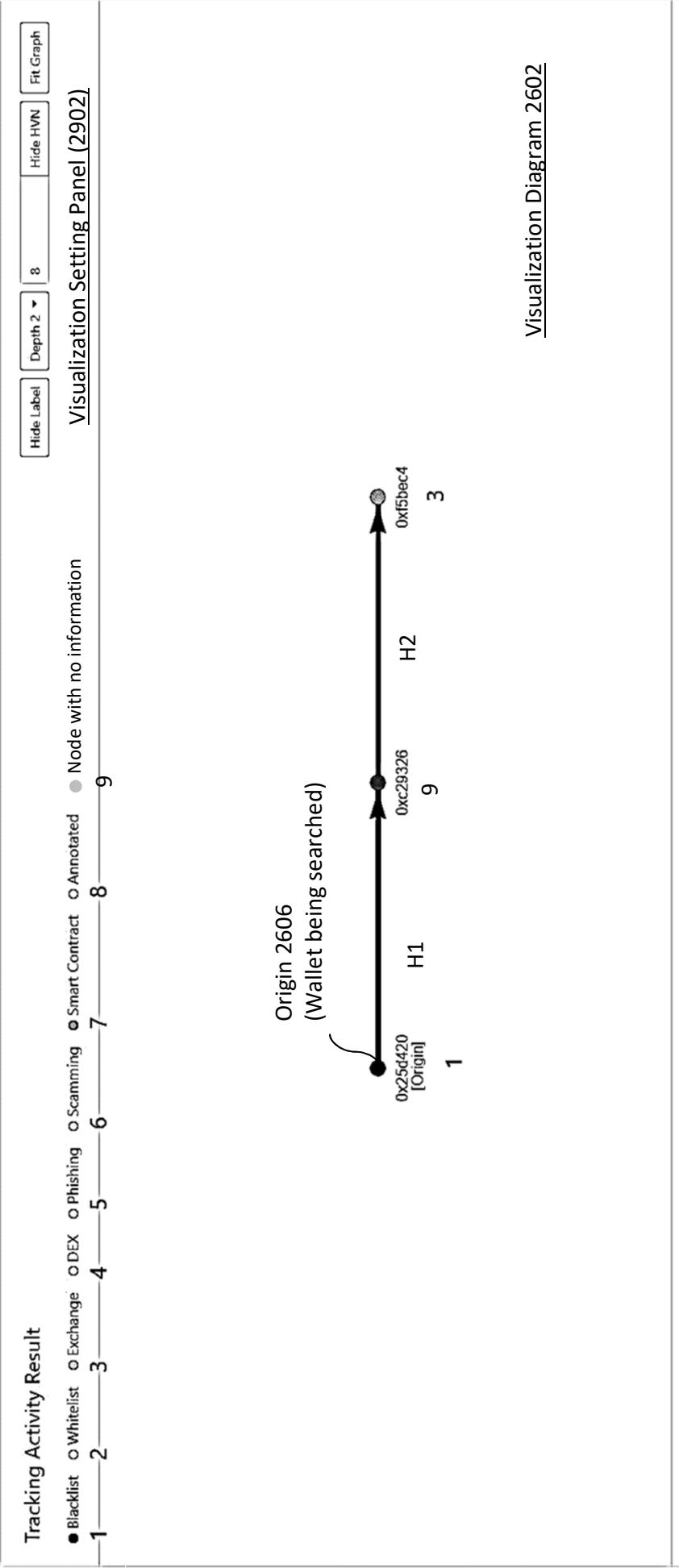


Figure 29

Distribution Depth (2608)

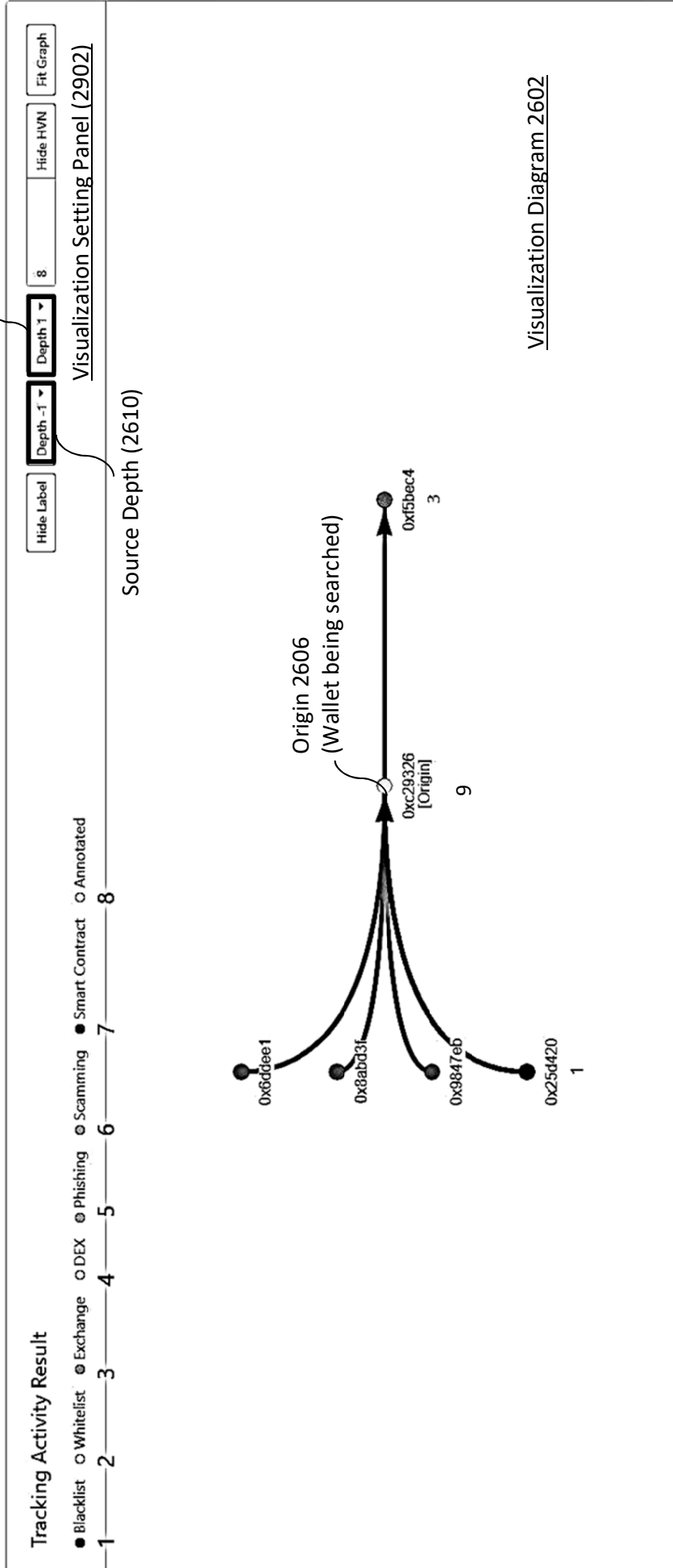


Figure 30

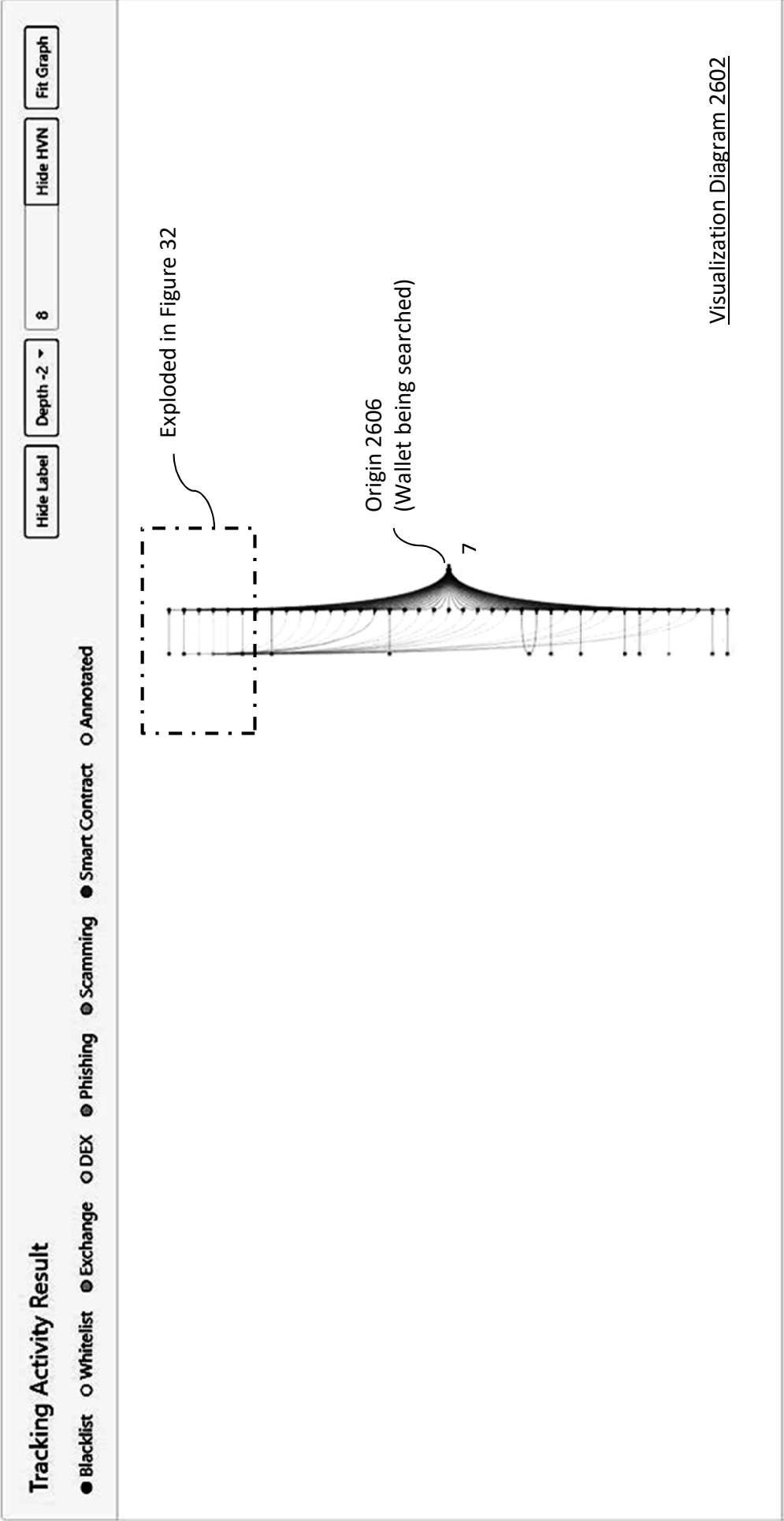


Figure 31

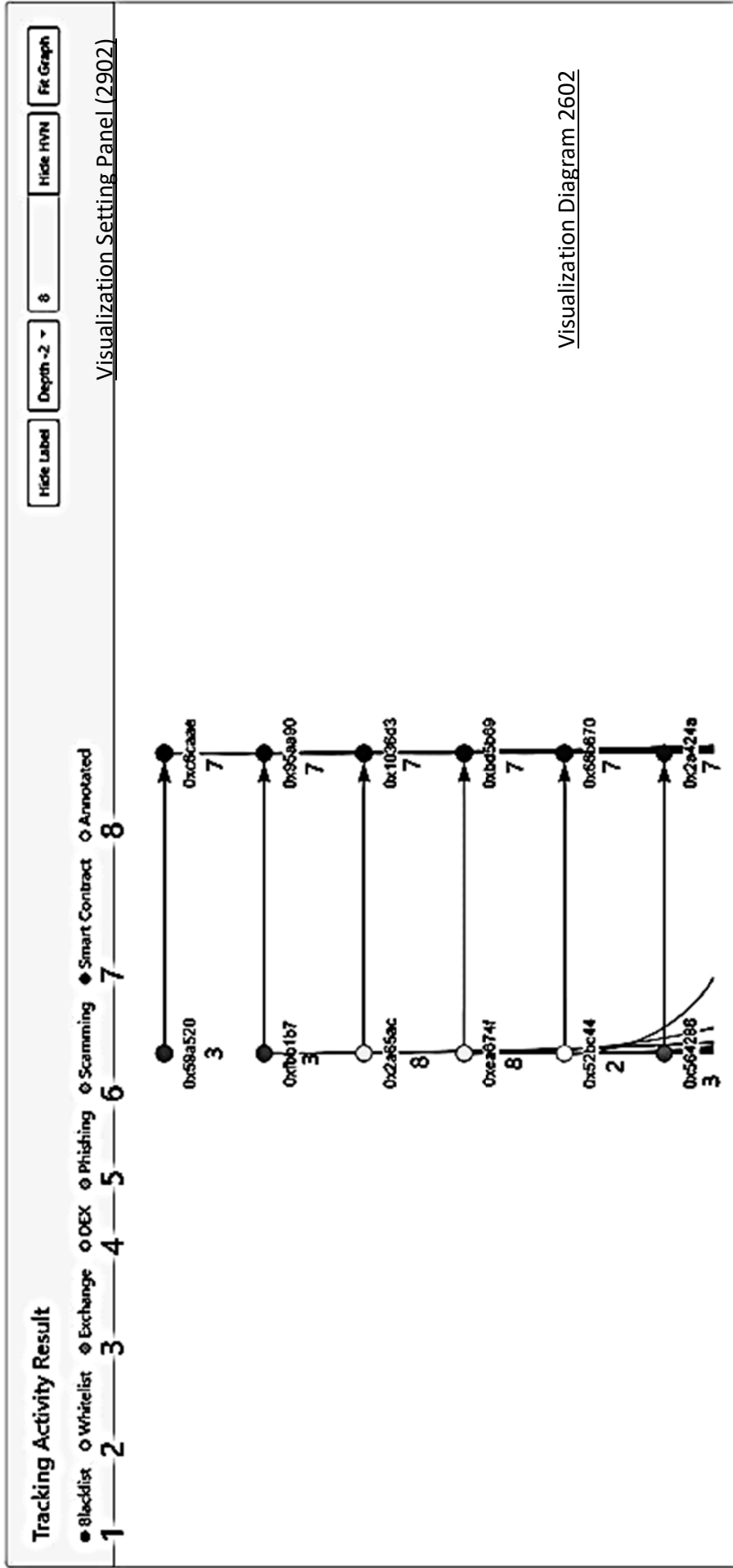


Figure 32

3302

Tracking Activity Result

☒ Blacklist

☐ Whitelist

☐ Exchange

☐ DEX

☐ Phishing

☐ Scamming

☒ Smart Contract

☐ Annotated

Hide Label

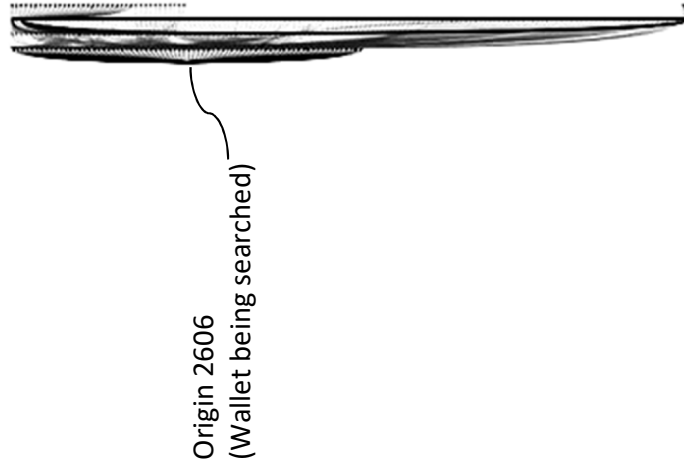
Depth 4 ▾

8

Hide HVN

Fit Graph

Visualization Setting Panel (2902)



Visualization Diagram 2602

Figure 33

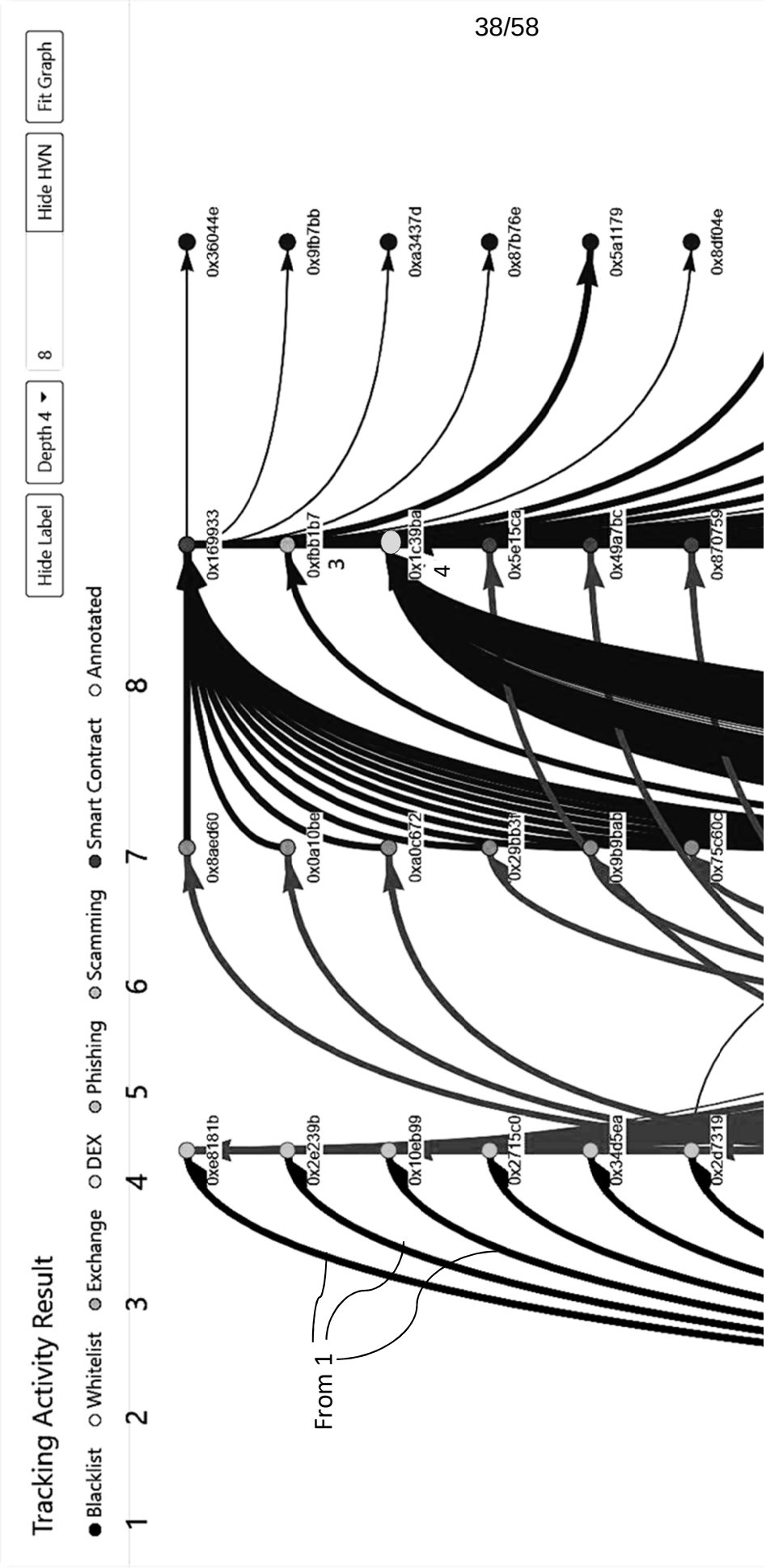


Figure 34

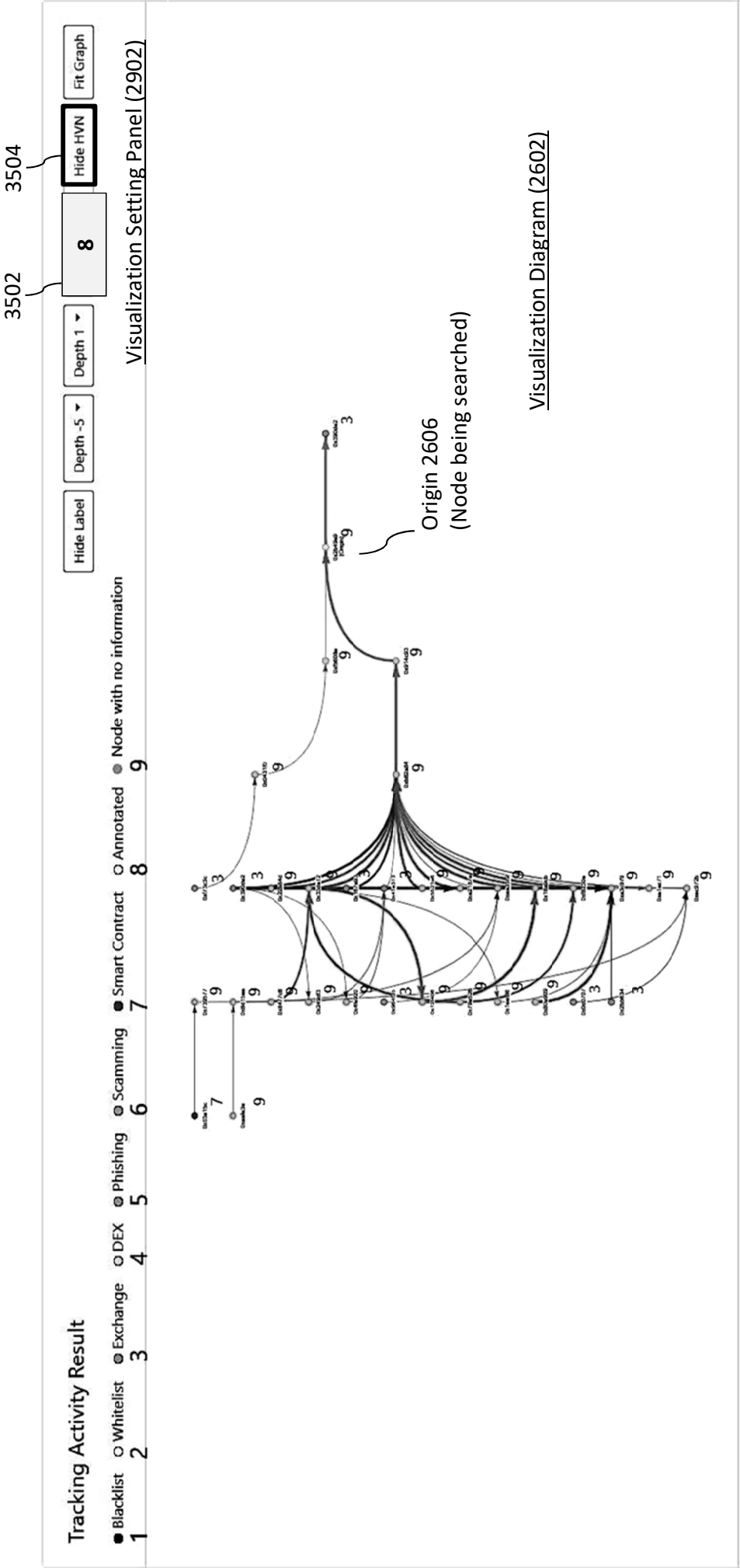


Figure 35

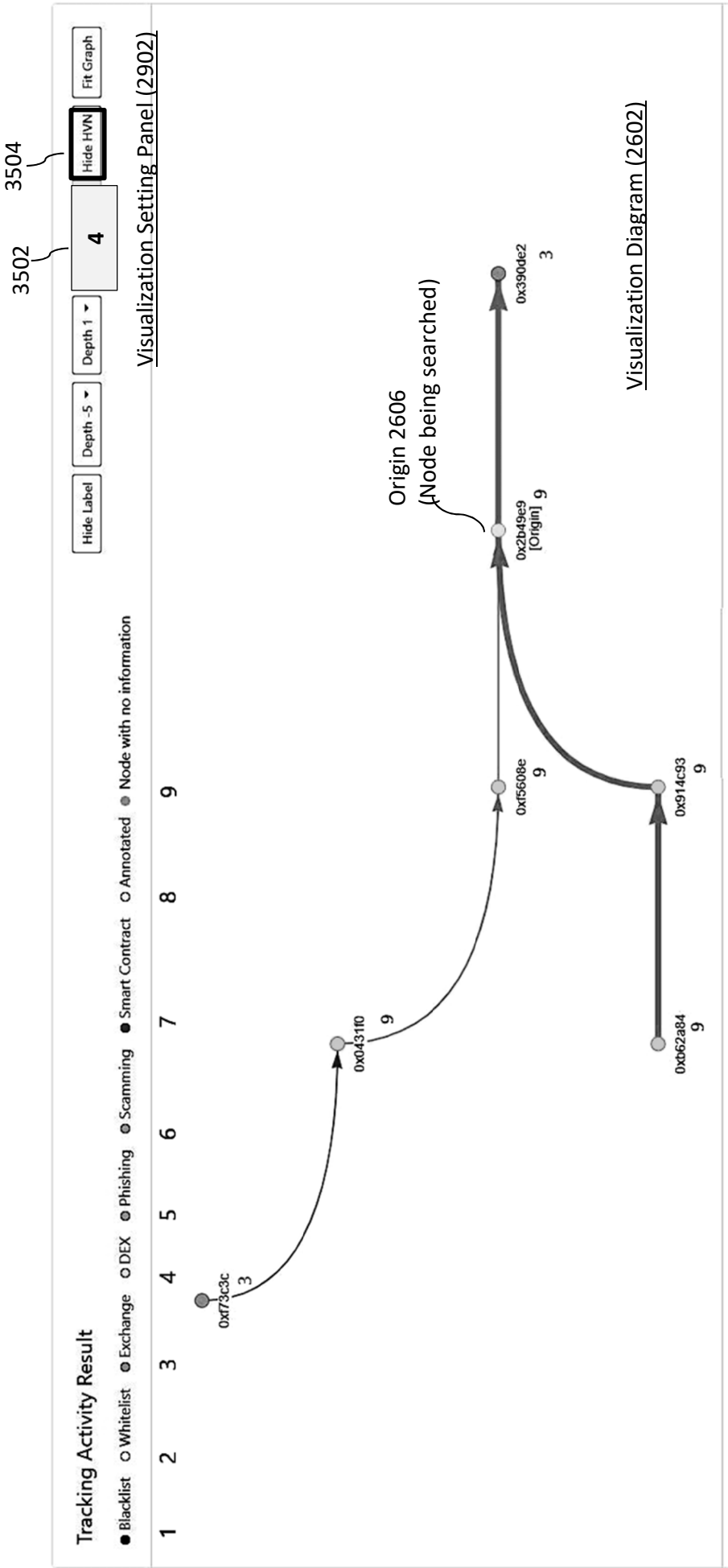


Figure 36

Function: depositToken(address token, uint256 amount)

MethodID: 0x338b5dea

[0]: 00000000000000000000000000000000c58c0fca06908e66540102356f2e91edcaeb8d81

[1]: 0000000000000000000000000000000000000000000000000000000000000000d8d726b7177a800000

Function: trade(address tokenGet, uint256 amountGet, address tokenGive, uint256 amountGive, uint256 expires, uint256 nonce, address user, uint8 v, bytes32 r, bytes32 s, uint256 amount)

MethodID: 0x0a19b14a

[0]: 00000000000000000000000000000000c58c0fca06908e66540102356f2e91edcaeb8d81

Function: withdrawToken(address token, uint256 amount)

MethodID: 0x9e281a98

[0]: 00000000000000000000000000000000c58c0fca06908e66540102356f2e91edcaeb8d81

[1]: 00000000000000000000000000000000000000000000000000000000000000003635c9adc5dea00000

Figure 37 (Different Methods Used in Smart Contract)

← → ↻ 🔒 https://etherdelta.com/#PPT-ETH

EtherDelta | PPT ▾

Main Ethereum Network

Account 2 → 0x8d12...6819

DEPOSIT #41

\$248.71

1

DETAILS DATA

EDIT

GAS FEE \$0.25

1.001

AMOUNT + GAS FEE

TOTAL \$248.96

1.001

<https://etherscan.io/address/0x8d12a197cb00d4747a1fe03395095ce2a5cc6819>

Figure 39 (Collection of Smart Contract Address)

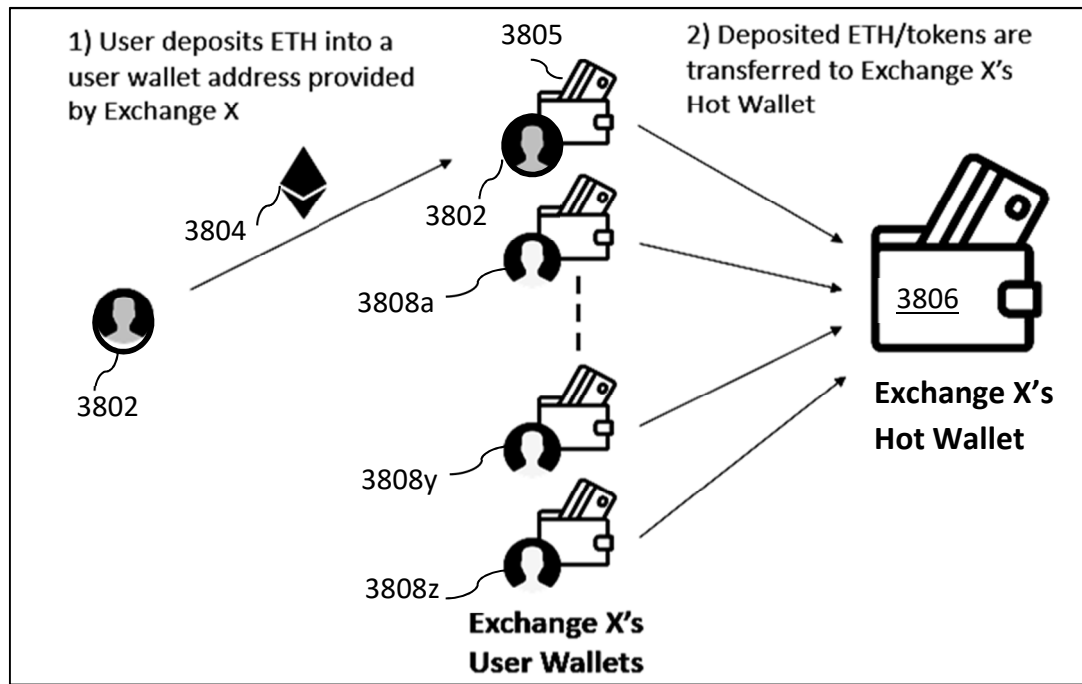


Figure 38A

	From		To	Value
t2	0x64db1b94a0304e...	OUT	0xc257274276a4e5...	0.00152183 Ether
t1	0xbb6b14026136fc...	IN	0x64db1b94a0304e...	0.00160583 Ether

Figure 38B

	From		To	Value
3805	0x64db1b94a0304e...	IN	0xc257274276a4e5...	0.00152183 Ether
	0x20fcfdde7838884...	IN	0xc257274276a4e5...	0.01 Ether
	0x8fed6d0ad578b7f...	IN	0xc257274276a4e5...	0.00366834 Ether
	0x88607688292791...	IN	0xc257274276a4e5...	0.00424344 Ether
3815	0x2140efd7ba3116...	IN	0xc257274276a4e5...	0.01 Ether
	0xffe1b99e1df1e34...	IN	0xc257274276a4e5...	76.99811 Ether
	0x90469a6b903d0d...	IN	0xc257274276a4e5...	0.49841839 Ether

Figure 38C

	From	To	Value
t8	0x0ea27883f916249...	OUT 0x2140efd7ba3116... 3815	3.02261009 Ether
t7	Upbit 1	IN 0x0ea27883f916249...	3.02 Ether
t6	0x0ea27883f916249...	OUT 0x5521a68d4f8253f... 3817	4.99811 Ether
t5	Upbit 1	IN 0x0ea27883f916249...	5 Ether
t4	0x0ea27883f916249...	OUT 0x22b84d5ffea8b80... 3821	2.0016404 Ether
t3	Upbit 1	IN 0x0ea27883f916249...	2.0035304 Ether
t2	0x0ea27883f916249...	OUT 0xc257274276a4e5... 3823 UW	1.99811 Ether
t1	0xf6230e7e98d2bb... 3825 EW	IN 0x0ea27883f916249... 3827 RW	2 Ether

Figure 38D

From	To	Value
0xe4c10e1b6c0c0e...	OUT 0x2c41b8e152d8fb1... 3835	9.998866 Ether
0xe4c10e1b6c0c0e...	OUT 0x00d7f2709c7b305... 3833	3.97606 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	1.986052 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	15.006052 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	27.99672334375 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	11.9966988 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	7.995926 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	9.996682 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	1.9976648 Ether
0xe4c10e1b6c0c0e...	OUT Upbit 1	18.9976774 Ether

Figure 38E

User Wallets Verification + Finding user wallets and exchange wallets process flow

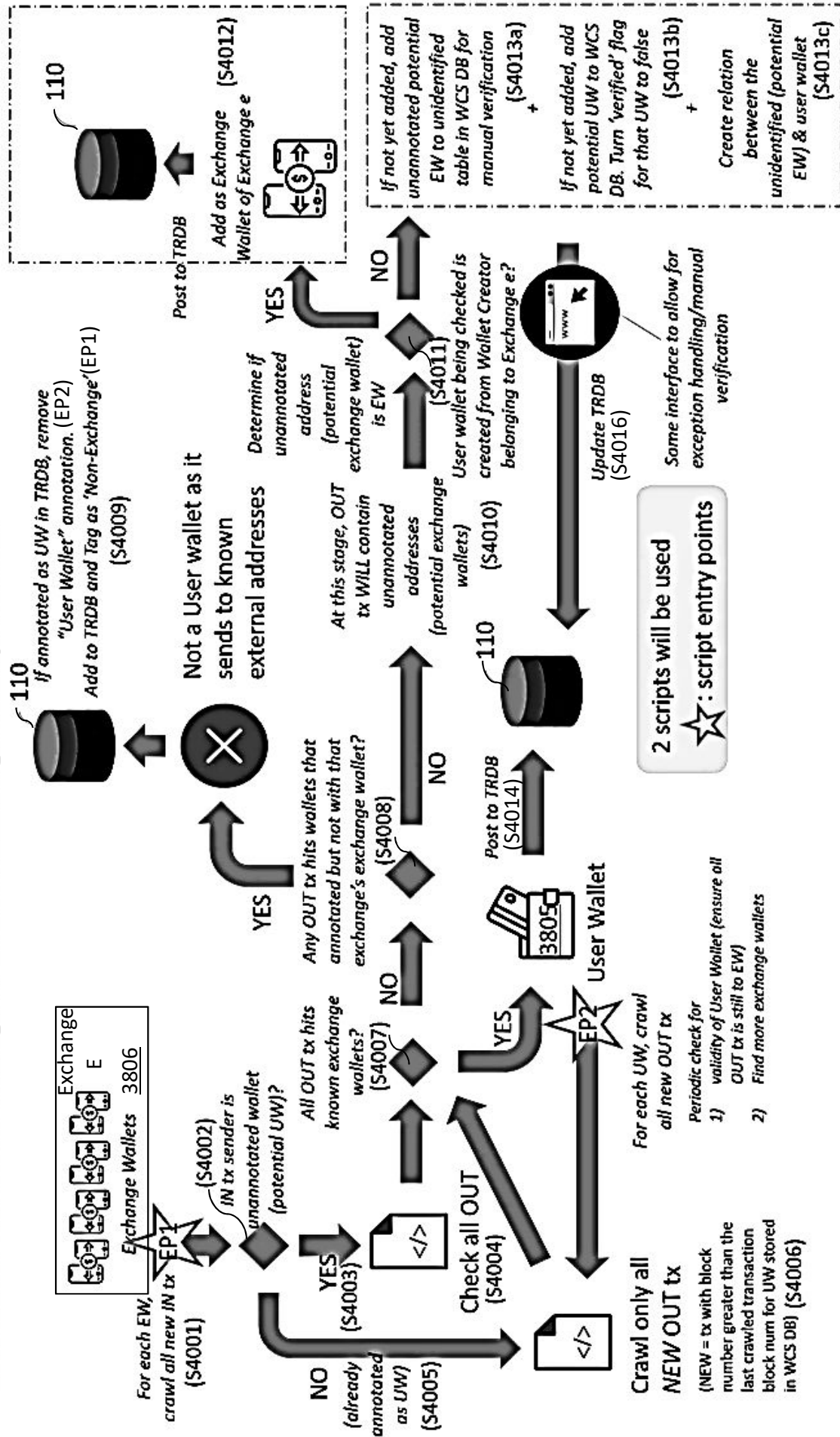


Figure 40

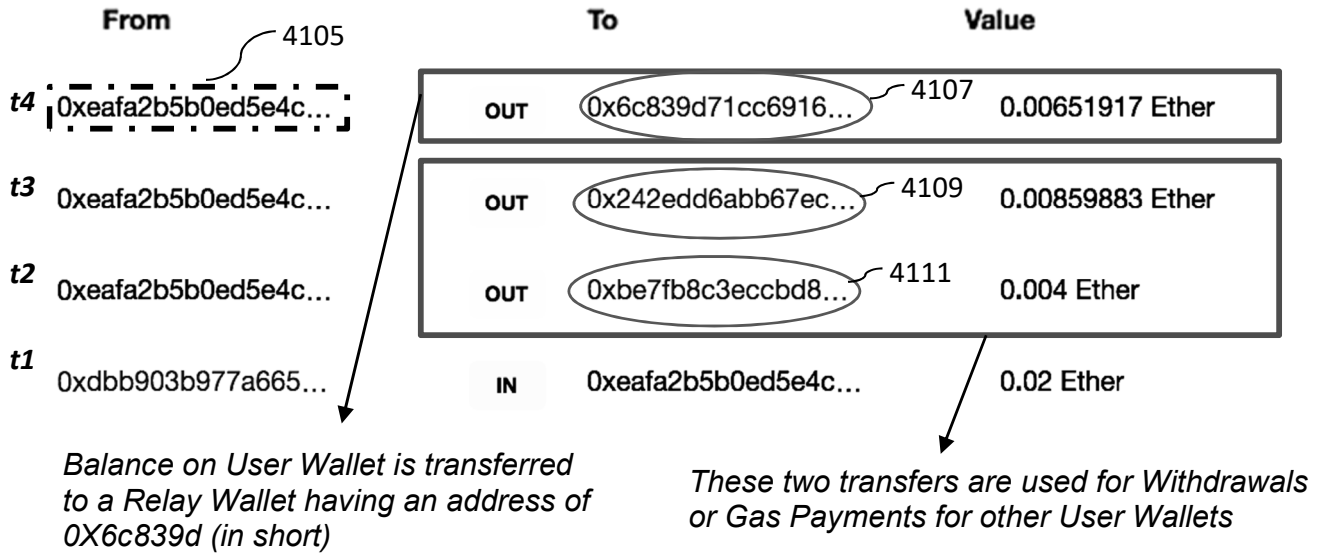


Figure 41A (identification of relay wallet)

From	To	Value
0x2ed62af7df45f0c...	IN 0x6c839d71cc6916...	0.006479877945154 Ether
0xbacc399c711cf40...	IN 0x6c839d71cc6916...	0.00648917 Ether
0x57ddc0db156a59...	IN 0x6c839d71cc6916...	0.0064809 Ether
0x7aab1637053627...	IN 0x6c839d71cc6916...	0.0064926 Ether
0xa718dc5fd78017...	IN 0x6c839d71cc6916...	0.006489 Ether

4107 points to the To address 0x6c839d71cc6916... in the first transaction.

Figure 41B (identification of user wallet)

From	To	Value
0x242edd6abb67ec...	OUT 0x869939a578d994...	0.00817883 Ether
0xeafa2b5b0ed5e4c...	IN 0x242edd6abb67ec...	0.00859883 Ether

4105 points to the From address 0xeafa2b5b0ed5e4c... in the second transaction.

4109 points to the To address 0x242edd6abb67ec... in the second transaction.

Figure 42A (identification of withdrawal relay wallet)

From	Balance on User Wallet is transferred to a Relay Wallet		To	Value
0xbe7fb8c3eccbd8...	OUT	0x058b022501fe91...	4210	0.00321716 Ether
0xbe7fb8c3eccbd8...	OUT	ZRX Token		0 Ether
0xeafa2b5b0ed5e4c...	IN	0xbe7fb8c3eccbd8...	4111	0.004 Ether

Figure 42B (identification of other relay wallet)

From	To	Value
0xd2a228a61cf14a8...	OUT	0x160fb77021df6a2... 0.00096 Ether
0xd2a228a61cf14a8...	OUT	0xcf0b95f76516f98... 21.184888438824687 Ether
0xd2a228a61cf14a8...	OUT	0x49bafcd3b72f09f... 79.610320291175312 Ether
0xd2a228a61cf14a8...	OUT	0xa2aa3f50ba3e7a1... 0.20215127 Ether

Splitting to 3 other Relay Wallets

Withdrawal to User Specified Wallet

Figure 42C (DEX: splitting to 3 relay wallets)

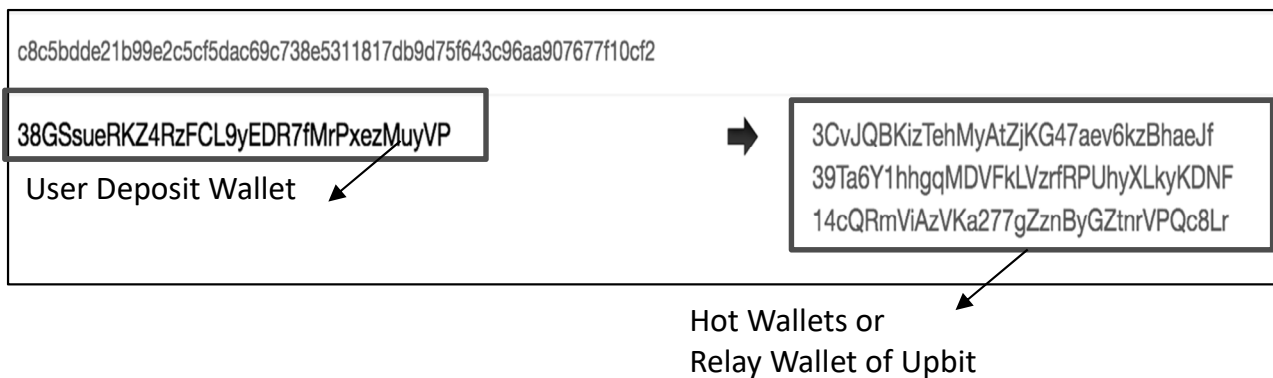


Figure 42D (Upbit Example)

Summary		Summary	
Address	3CvJQBKizTehMyAtZjKG47aev6kzBhaeJf	Address	39Ta6Y1hhgqMDVFkLVzrfRPUhyXLkyKDNF
Hash 160	7b2c8b84373ba959189263477f652c3bebee9079	Hash 160	553609f30f893d9810bb7293b07f9f4afc93ef81
Transactions		Transactions	
No. Transactions	2	No. Transactions	2
Total Received	49.87448144 BTC	Total Received	0.59755761 BTC
Final Balance	0 BTC	Final Balance	0 BTC

Figure 42E

84538a587f23677bf8fb62d692b395b0710993223b5a6b42135a7034c806b44b	
39Ta6Y1hhgqMDVFkLVzrfRPUhyXLkyKDNF	➡ 3PZQjj4o2fzWZ7XZ2UN956bpvp5o9T2cyG14cQRmViAzVKa277gZznByGZtnrVPQc8Lr3LoPJV268j91K25vWujW1D9utrnGwu2u32P

Figure 42F

Summary	
Address	14cQRmViAzVKa277gZznByGZtnrVPQc8Lr
Hash 160	279a7ded82665d7c6844277b690555f6e812918b
Transactions	
No. Transactions	24351
Total Received	410,160.39983373 BTC
Final Balance	738.55837387 BTC

Figure 42G

57004cc1124fc7a231530c0515fd0f8f0065fe05236d4e9907d2d12481fa593c

38GSsueRKZ4RzFCL9vEDR7fMrPxezMuyVP
 3CzP1Nv67rm5bgpMTAEnjS4FsHY2HYDkHn
 387JQAzAKx1JKyFCQWAF8cZxXsTe7QcW6o
 3AEvcsDM1DxNjXw1CMeQ3TAEq5wPSNqW8
 39gAHLJwkjTqZeG7Ke14njYUo7AyhiuHhS
 39TEZjnx72emZ2iKgTaApDBXmagg9VBmDjz
 3AzzBS8dRhg4xdbYmkVzAo7UxaS5HcL8sD
 3FSDacucxTb4yCCzBomwTccAhXKZRCbFR8
 3B2BPb2vESXZZcbAnTcmnYeHe1ymx4oTjo
 32BigeTBsX6Z1C4oKpyHx4J7HVDTeMAECJ
 33d7fE242EizSF8yLbuM3UR38AH3fAnFQB
 38FBoYzAug3ZaeuozccGrijSVyHdS1S
 38hUmiEkfcDCyoFGDLP3tc9pheknk1KPYJ
 3HUMeSfZ7S6HgRBVMtcxNiry6UUwqTXSYk
 34zcVzXEoAKLJwPhfqPGMHtkV8Sgst4rkm
 3F3xxfRpWK98DtZAsvALvmgvc7HrhPuWAQ
 3NDDD88nt4dkfz1WME5WxtL1CwPtKg7Xem
 3KujfwASXjtVRaXuLZPyX3mrZ4nxNYuMkS
 3LGKp5jBxUFDJcnSfeg1A3evkk7iq622VQ
 3PKvdt37gD8UUpVrnK41HVmFWCsZt27jsn
 33jqRUBjx9xvfVMMUotorqdLJCpFEMZaLf
 3Nqe62QHhCRKDEprGLVJQY4jLSE5sfz7oW
 3Kb2vo3UNm56ZRQEejpKR51oeaHXZYGNq8
 3Awfn1uZL7FCaNqebKbSfWpDCr9GGr2SLs
 33T3E3JKoM2FjSaeCsmhknQk6TGQuaVfTv
 37R1SLZfCbVEuczQMxBGLU1owziXB4yTwp

User Deposit Wallet
of Figure 42D

14cQRmViAzVKa277gZznByGZtnrVPQc8Lr

Hot Wallet of Upbit

Potential User Wallets of Upbit

Figure 42H (Continuation of Figure 42D)

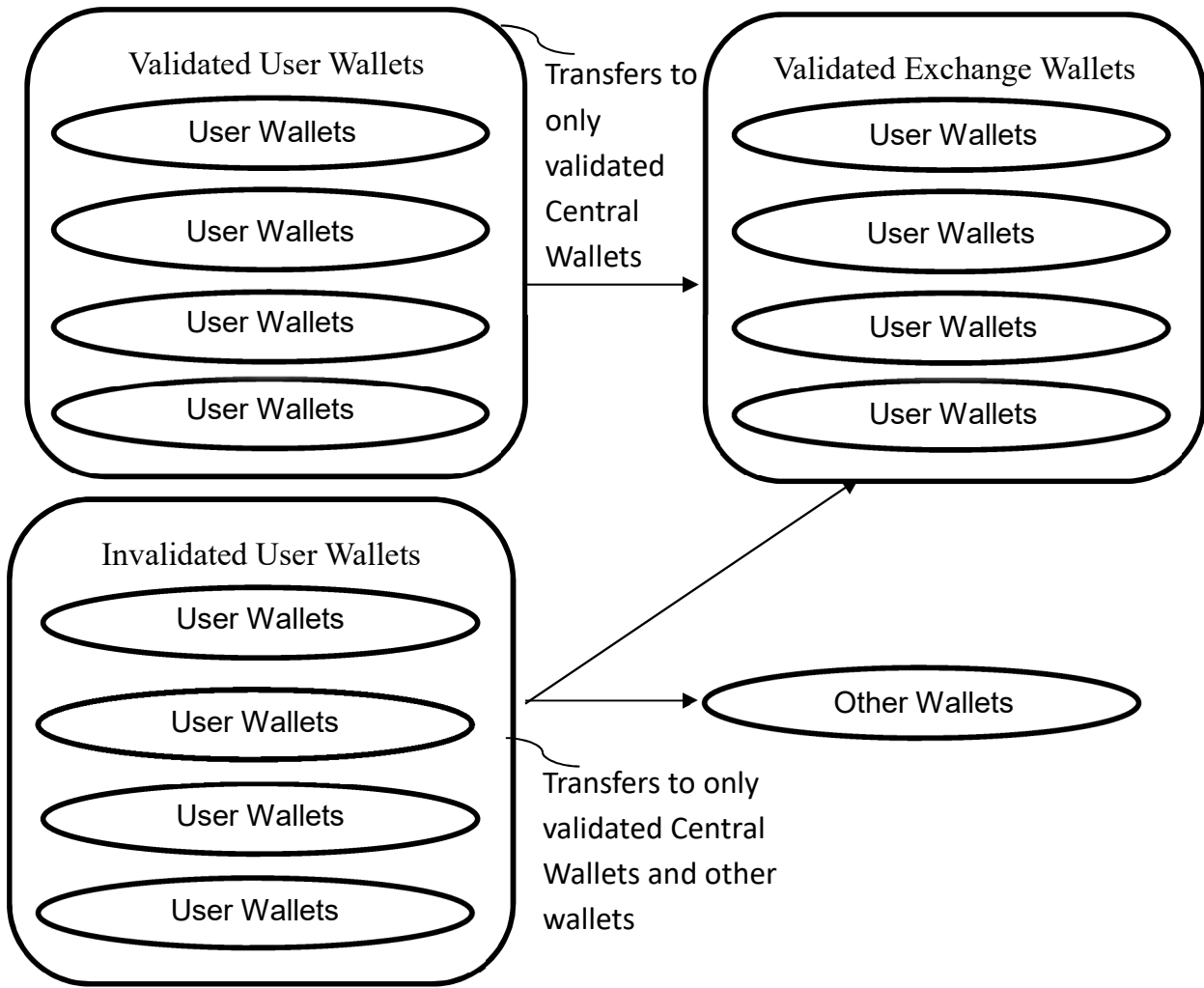
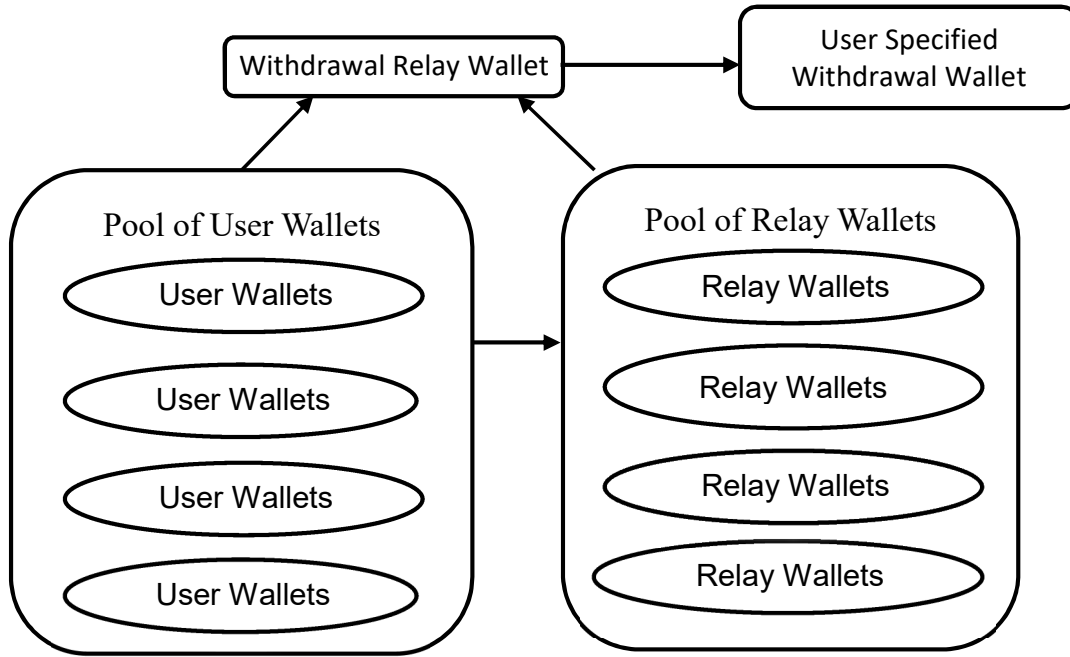


Figure 43

**Figure 44**

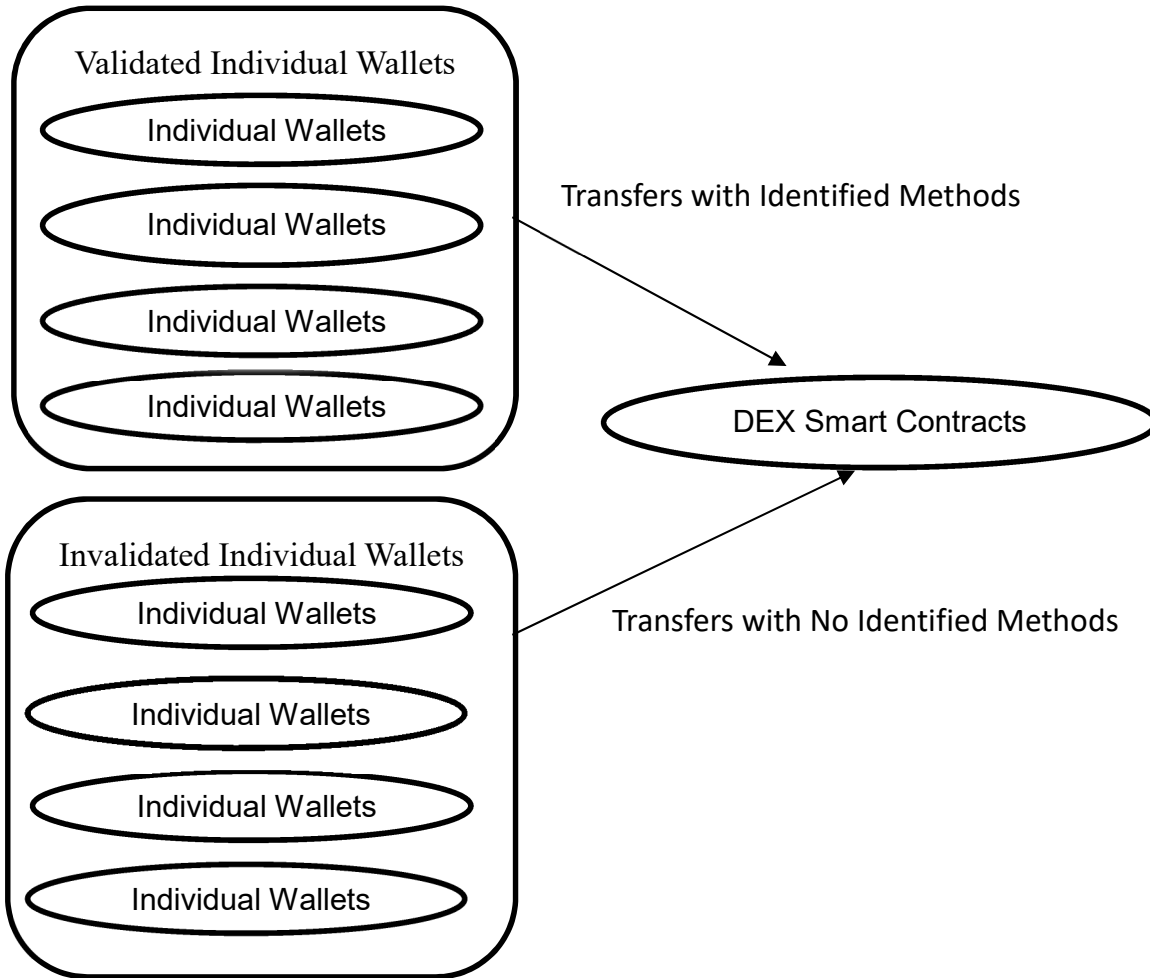


Figure 45

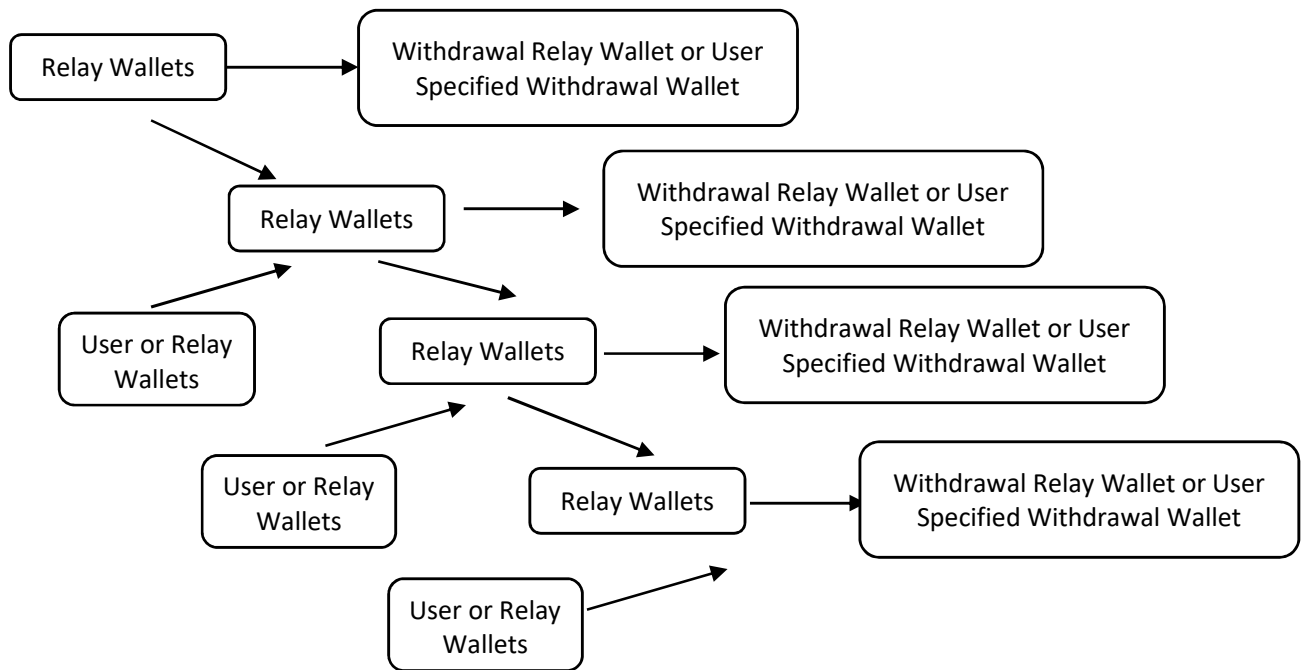


Figure 46

```

***** CURRENT RUNNING PROCESSES *****

+-----+-----+-----+-----+-----+-----+
| run_id | type                | exchange | wallet                                     | filepath | initiator |
+-----+-----+-----+-----+-----+-----+
| 31     | Wallet Creator Crawl | Bitbay   | 0xeec02515a59f4369ad3d9fc7a47049585b589db5 | -        | Donovan   |
+-----+-----+-----+-----+-----+-----+

Operations Menu

1. Add & Crawl (New) Wallet Creator Address
2. Add & Crawl (New) Exchange Wallet Address
3. Add User Wallets With R/S via .csv file
4. Add User Wallets via .txt file
5. Add Non-Exchange Wallets with R/S via .txt file
6. List all Exchanges
7. Add Exchange
8. List all Wallet Creator Addresses
9. List all DEX
10. Add DEX
11. List all OTC
12. Add OTC
13. List all Exchange-Owned Wallets
14. Add Exchange-Owned Wallet
15. Add Exchange-Owned Wallet (Bulk)
16. Edit Exchange-Owned Wallet
17. List all Token Contract Address
18. Add Token Contract Address
19. List all Unidentified Wallets
20. Handle Unidentified Wallets
21. Exchange - Token Relationships
22. Exchange - User Wallets
23. User Wallet validity check (Exchange)
24. User Wallet validity check (Big Tx)
25. List all User Wallets requiring revalidation
26. Handle User Wallets requiring revalidation
27. Flag spam broadcast addresses
28. Flag invalid user wallets
29. Handle failed/stopped runs
30. Exit

> Choose option:

```

Figure 47 (Main menu of wallet crawler system)

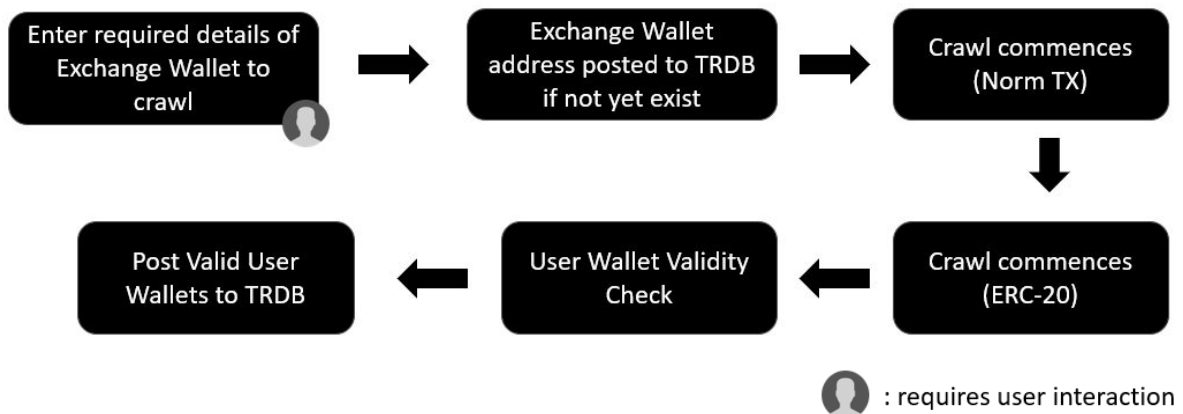


Figure 48

HANDLE UNIDENTIFIED WALLETS

Format: (ID) Address [Possibly related exchange]

These are unknown addresses which received tokens from addresses previously labelled as user wallets.

Choose an unidentified wallet to see more details & decide what to do with it.

id	address	exchange?	# UW rcvd from
3993	0x2bb97b6cf6ffe53576032c11711d59bd056830ee	Kraken	434
5625	0x097511b9af934c6acb44ba110c24783f57fb4cbb	Bitbay	470

Select unidentified wallet(id):

Figure 49A (Handle Unidentified Wallets)

Select unidentified wallet(id): 5625

```
#####
SELECTED WALLET: 0x097511b9af934c6acb44ba110c24783f57fb4cbb
```

Possibly exchange wallet of: Bitbay

Total Number of unique, prev identified User Wallet received from: 470

-- Breakdown --

> Bitbay, #wallets: 470

Show User Wallets in breakdown? (y/n): y

exchange	#addresses	addresses
Bitbay	470	0xc3a319fef732dd5a01c160e6bea06d021fb13435 0x454a6b803714df668982ab3130f5a37bb11beb2e 0xa4d1f18c896f098c43b65b83b90141ce51d49a25 0xcfd2ece2d24e133644a2882fd43eb264eef2982 0xd6194361fe5c23a0d9bc9ffe231ce7bc6b6d8de7 0xa468335479c73bb5edc2933cedd7f73b91929dbc 0x836e385b2706cc7e75245cf940982bdf27d833b 0x05f0a03375060a703a7300400d6c1a3250c0

Figure 49B

Possible actions:

> Yes(y): Unidentified wallet will be reclassified as Exchange wallet.

All user wallets that sent to this address will remain as valid User wallets.

> No(n): Unidentified wallet will be rejected as Exchange wallet.

[IMPORTANT] All prev identified user wallets that sent to this address CANNOT be user wallets.
 They will be sent to TRDB and re-annotated as "Non-Exchange".

> No, but User Wallets Valid (nv): Unidentified wallet will be rejected as Exchange wallet, but User Wallets that sent to it still valid.

Choose this for special cases, e.g. when unidentified wallet is for token swap.

> Leave(l): Leave Unidentified wallet in list & KIV.

Select this option if investigation still under way & decision cannot be made yet.

Accept Unidentified Wallet as Exchange Wallet? (y/n/nv/l):

Figure 49C

A total of 133,406 txns found
(Showing the last 10,000 records only)

First < Page 1 of 200 > Last

Txn Hash	Age	From		To	Value	Token
0x45b860d6266a5c...	227 days 19 hrs ago	0xd3b15fb285e5c52...	IN	0xab32e544b16b7...	0.0000000437164	⚡ ElectrifyAsi... (ELEC)
0xa1130a2c176943...	227 days 19 hrs ago	0xd3b15fb285e5c52...	IN	0xab32e544b16b7...	0.00001156	⚡ ElectrifyAsi... (ELEC)
0x21d34a9b37340fe...	227 days 19 hrs ago	0xd3b15fb285e5c52...	IN	0xab32e544b16b7...	9.4863	⚡ ElectrifyAsi... (ELEC)
0x1dc94aeb872538...	234 days 4 hrs ago	0xab32e544b16b7...	OUT	0x18e9ce9fccf0abe...	555.423773	⚡ ElectrifyAsi... (ELEC)
0x1dc94aeb872538...	234 days 4 hrs ago	0xab32e544b16b7...	OUT	0x2818651a2a70c9...	553.949025	⚡ ElectrifyAsi... (ELEC)
0x1dc94aeb872538...	234 days 4 hrs ago	0xab32e544b16b7...	OUT	0xd6560c75403b63...	565.828797	⚡ ElectrifyAsi... (ELEC)
0x1dc94aeb872538...	234 days 4 hrs ago	0xab32e544b16b7...	OUT	0x64384ee8596f138...	551.757014	⚡ ElectrifyAsi... (ELEC)

Figure 50 (Example of Spam address – ElectrifyAsia)

Overview [ERC-20]

Profile Summary



PRICE
\$0.0000 @ 0.000000 Eth

FULLY DILUTED MARKET CAP ⓘ
\$0.00

Token Name: blockwell.ai KYC Casper Token

Total Supply: ⓘ 0 blockwell.ai KYC Casper Token

Contract: 0x212d95fccdf0366343350f486bda1ceafc0c2d63

Holders: 0 addresses

Decimals: 18

Transfers: 596,247

Social Profiles: Not Available, Update ?

Transfers Holders Info Read Contract Write Contract Analytics Comments (13)



A total of 596,247 transactions found
(Showing the last 100k records)

First < Page 1 of 4000 > Last

Figure 51 (Example of Spam address– blockwell.ai KYC Casper token)

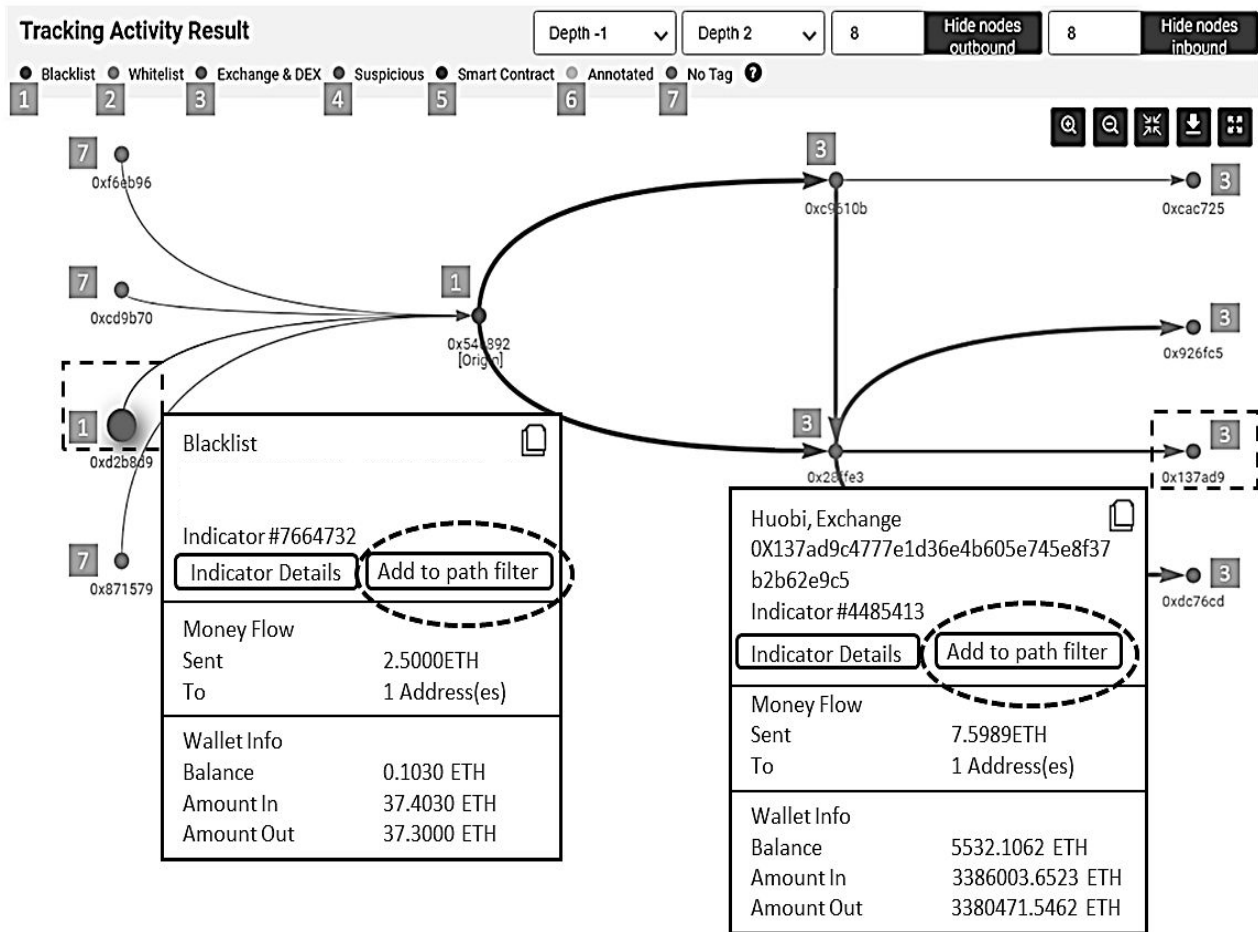


Figure 52 (Before Path filter)

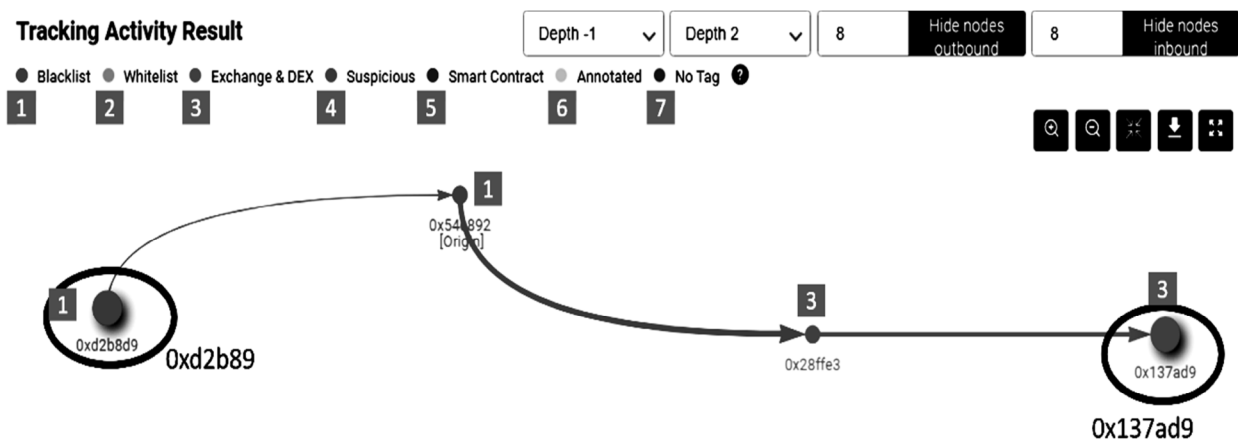


Figure 53 (After Path filter)

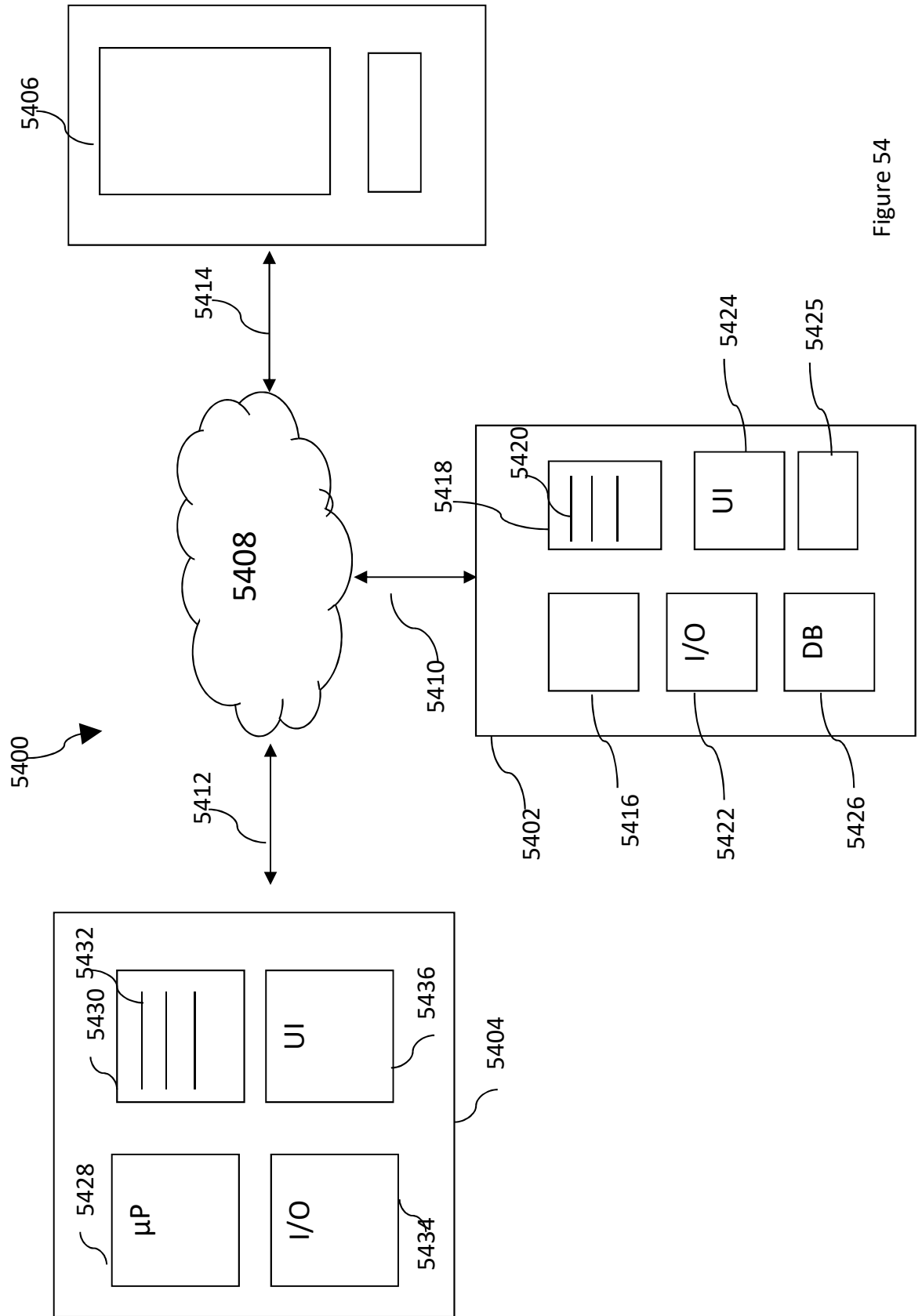


Figure 54

TYPE	ADDRESS	ANNOTATION	SECURITY CATEGORY	SECURITY DETAILS
ETH	0xcc2a61901cb2a11e0d3348b578a3e6e551b1b50e	Bithumb, Exchange	Graylist	
ETH	0xcc2a61901cb2a11e0d3348b578a3e6e551b1b50e	Bithumb, Exchange, Token	Graylist	
ETH	0x921adfc666a564b2991464c394c2aa43911834b4	Bithumb, User Wallet	Graylist	Relationship with 0xa6cb6c3f12d03b57c9086c6ecd046d37abed0b7c
ETH	0x6829dcac96d016f40f175cbdb76b92d6cdfa6240	Bithumb, User Wallet	Graylist	Relationship with 0xc257274276a4e539741ca11b590b9447b26a8051 Relationship with 0x2140efd7ba31169c69dfff6cdc66c542f0211825

Figure 55