vicomtech

MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

Entity identification in the cryptoasset ecosystem

International Digital Security Forum 2022

Anti-FinTer

Context

TITANIUM: Tools for the Investigation of Transactions in Underground Markets

Versatile artificial intelligence investigative technologies for revealing online cross-border financing activities of terrorism

Context

Entity: person or organization that controls or can control multiple public-key addresses

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Why is important to identify entities?

- During an investigation, it is not enough to detect malicious/illicit addresses or transactions.

- LEAs need to investigate the entity that has generated these malicious/illicit activities

However, LEAs have difficulty to start an investigation:

- A large number of addresses to be controlled (waste of time and resources)

- Unknow *real-world* actor's identity

Entity Taxonomy*

- **Miner:** who participates in validating transactions on the blockchain
- **Service:** A service refers to some software functionality or a set of software functionalities that can be used by different actors for different purposes.
- **Exchange:** that provides services to buy and sell tokens and for exchange of FIAT currencies

- **Trading platform:** P2P Exchange, Decentralized Exchange
- **Wallet providers:** Hardware wallet, software wallet, custodian wallet
- **Escrow:** a contractual arrangement in which a third party receives and disburses assets
- **Tumbler:** a method of scrambling or anonymizing the source of one's cryptocurrencies
- **Darknet Market:** is a commercial website on the web that operates vias darknets

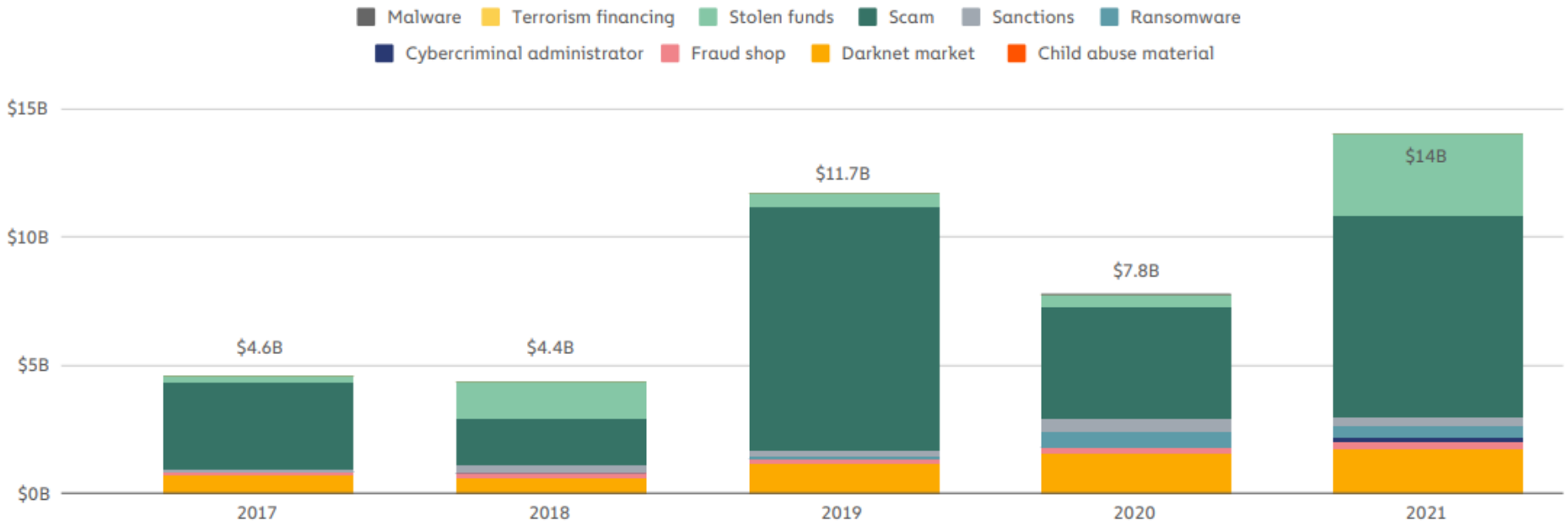
Other: Gambling, Flash Loan, Crypto ATM, Dead drop, etc.

**Entity Taxonomy: version 0.3, Last Modified: 2022-01-21, Creator: INTERPOL Darkweb and Virtual Assets Working Group*

Cryptoasset ecosystem

Cryptocurrency-based crime hit a new all-time high in 2021, with illicit addresses receiving $14 billion over the course of the year, up from $7.8 billion in 2020.

Total cryptocurrency value received by illicit addresses | 2017–2021

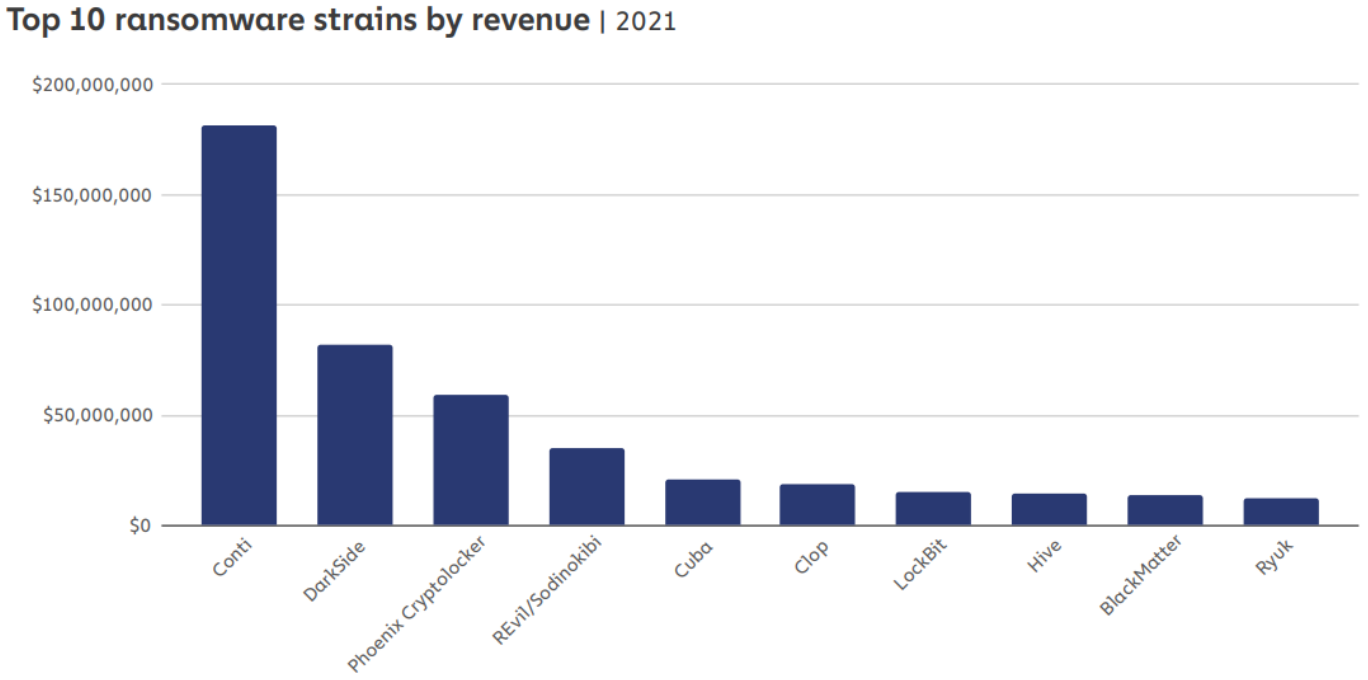


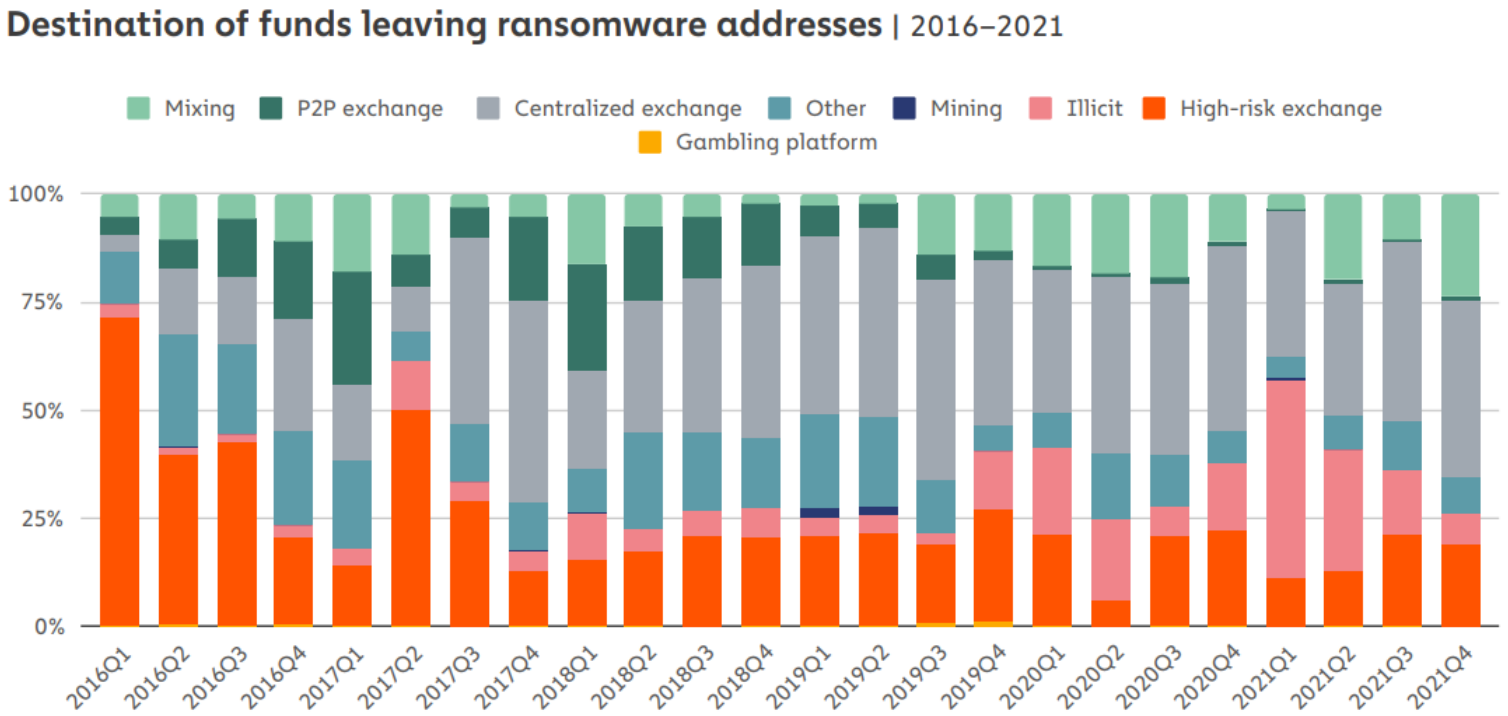
*Source: Crypto-Crime-Report-2022

Cryptoasset ecosystem

Ransomware

In 2020, $ 692 million were involved in ransomware payments and about $602 million worth in 2021.
Most ransomware strains have laundered their stolen funds by sending them to centralized exchanges.



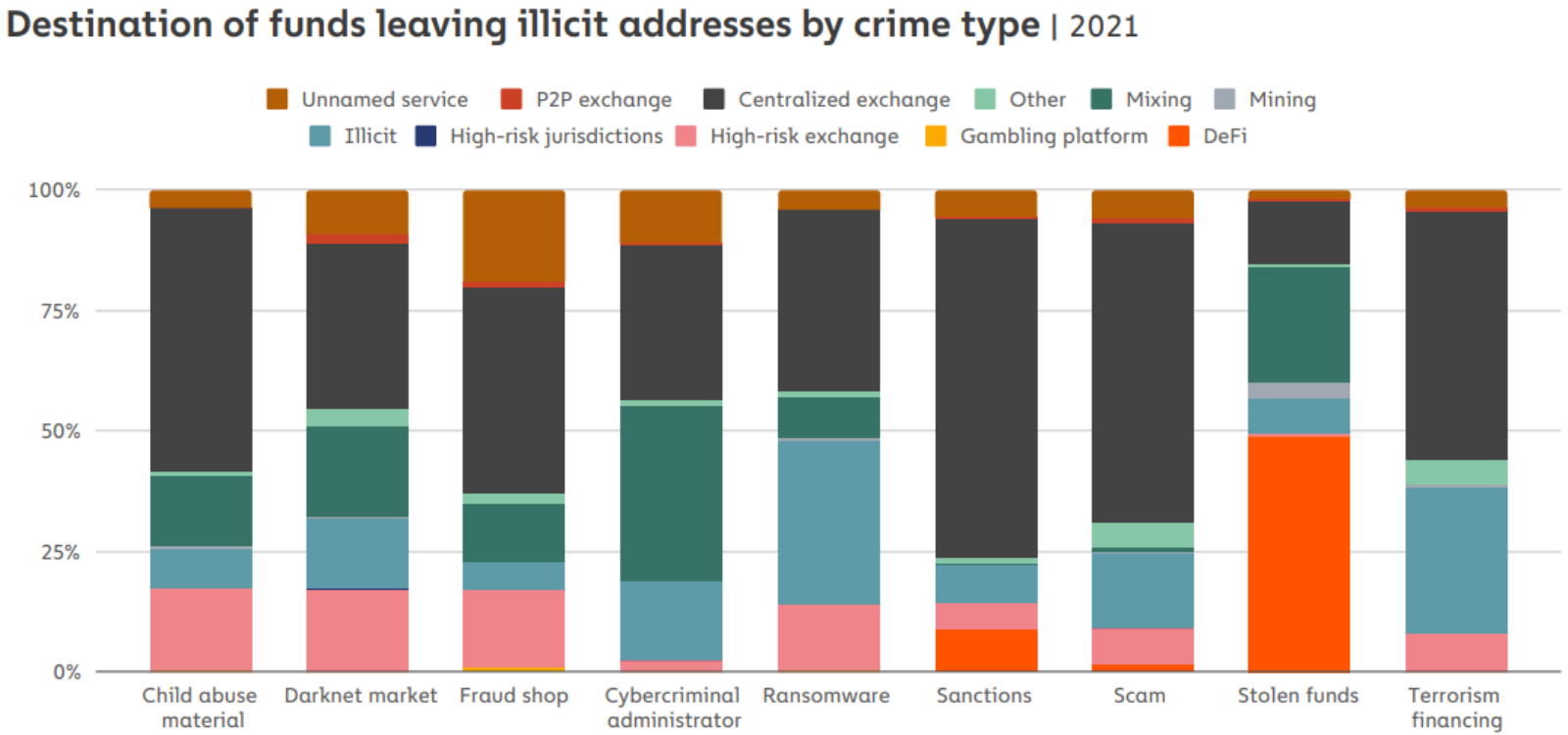


Source: Crypto-Crime-Report-2022

Cryptoasset ecosystem

Money laundering

While billions of dollars worth of cryptocurrency move from illicit addresses every year, most of it ends up at a surprisingly small group of services, many of which appear purpose-built for money laundering based on their transaction histories.



*Source: Crypto-Crime-Report-2022

Cryptoasset ecosystem

Terrorism Financing (TF)

In 2019 and 2020, al-Qaeda raised cryptocurrency through Telegram channels and Facebook groups. More than $1 million was seized from a money service business (MSBs) operator who facilitated some of these transactions.

In the early Spring of 2021, al-Qassam Brigades, Hamas' military wing, collected more than $100,000 in donations. In July, the Israeli government seized much of it from associated MSBs.

!! However, it is difficult to relate TF directly with crypto entities !!

**Source: Crypto-Crime-Report-2022*

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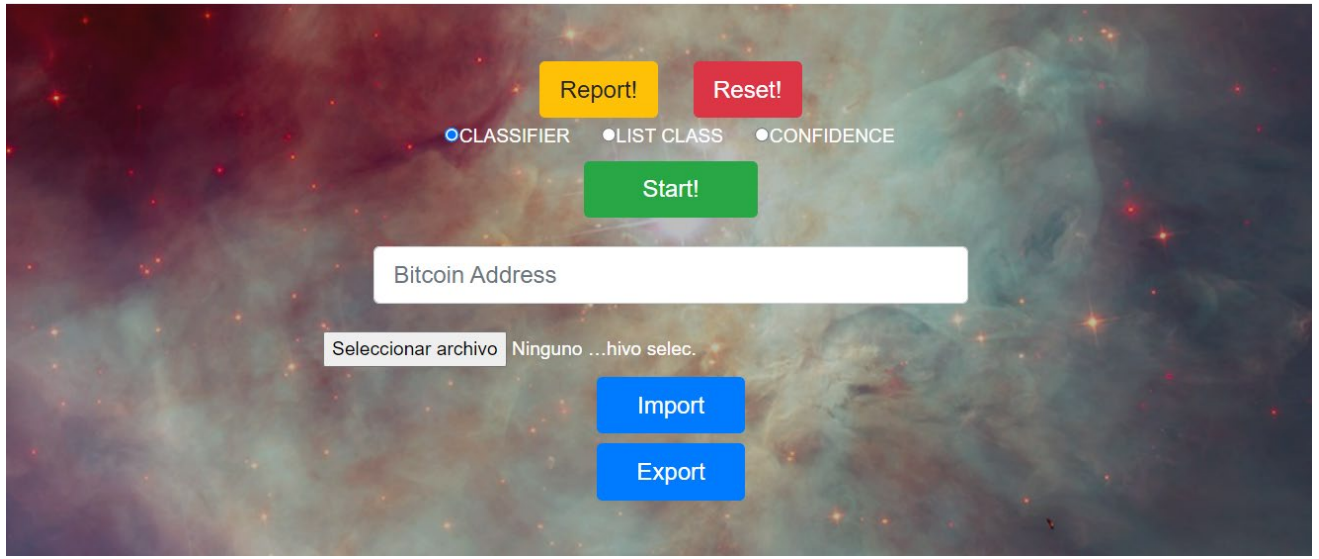
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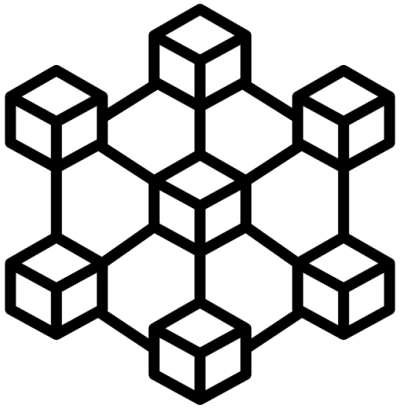

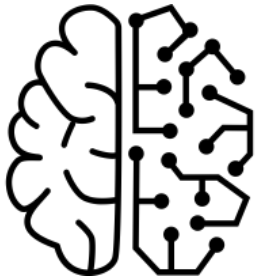

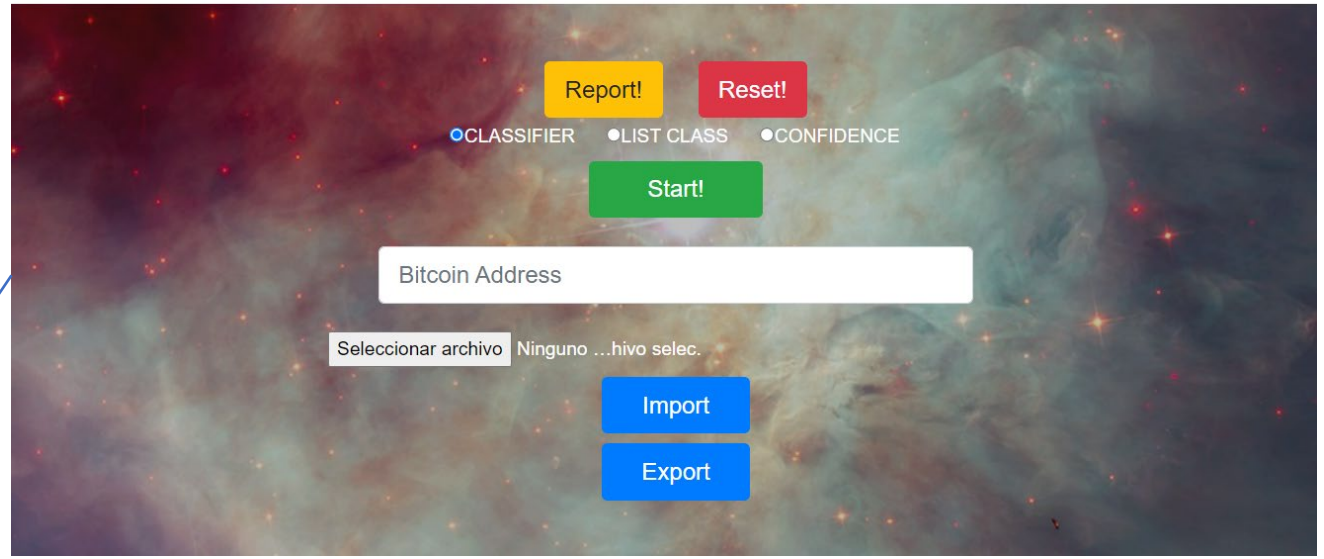
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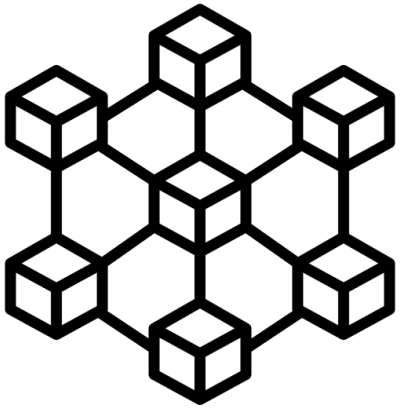

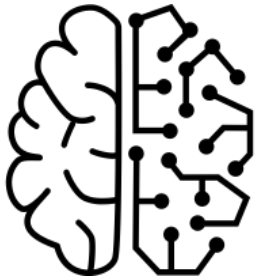

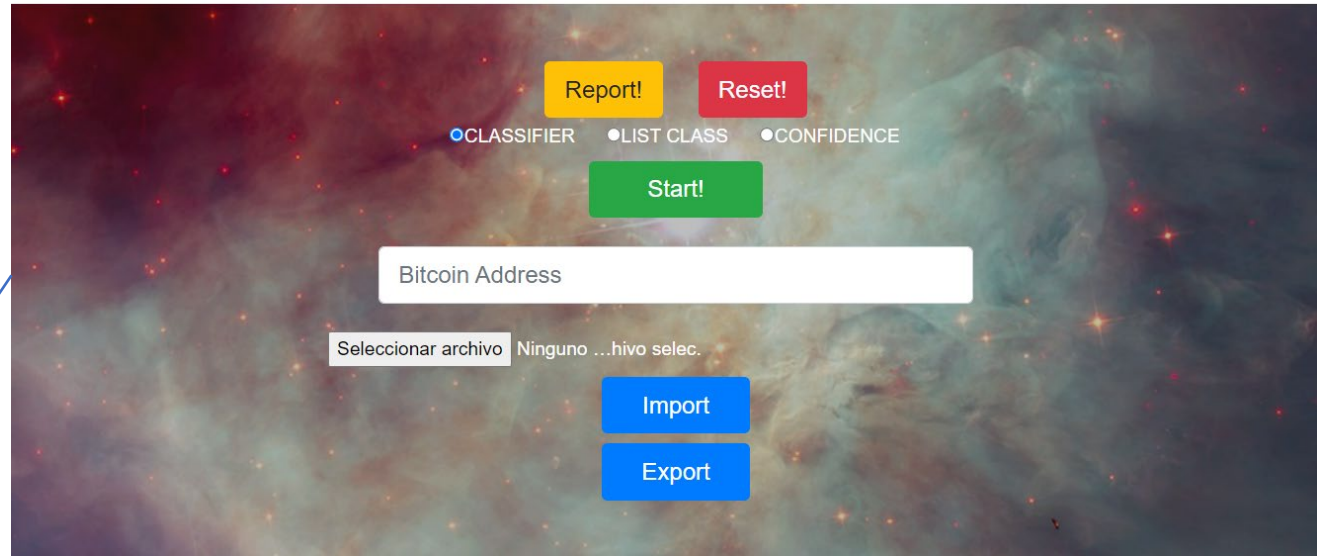

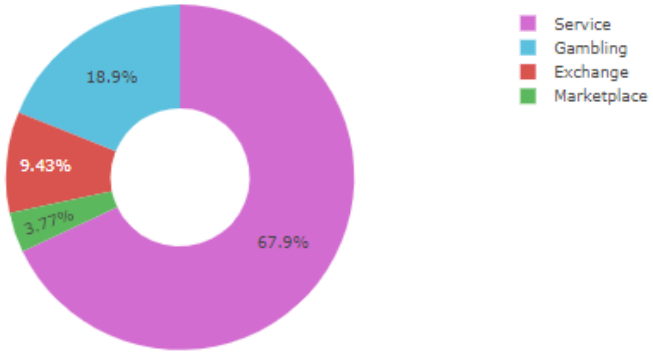

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Cluster Label: Poloniex.com

version: 1

Open challenges

- How we can prevent terrorism financing since they can also use licit funds?

- We the introduction of technology such as Non-fungible Tokens (NFT), how do entity behaviours change? Does it promote new illicit patterns?

- How is it possible to deal with the (grown) number of darknet markets?