

SECURE. PRIVATE. UNTRACEABLE.



**MONERO**

Barcelona, Spain



# Welcome

Justin Ehrenhofer

Finance  
Management Information Systems

/u/SamsungGalaxyPlayer or sgp\_



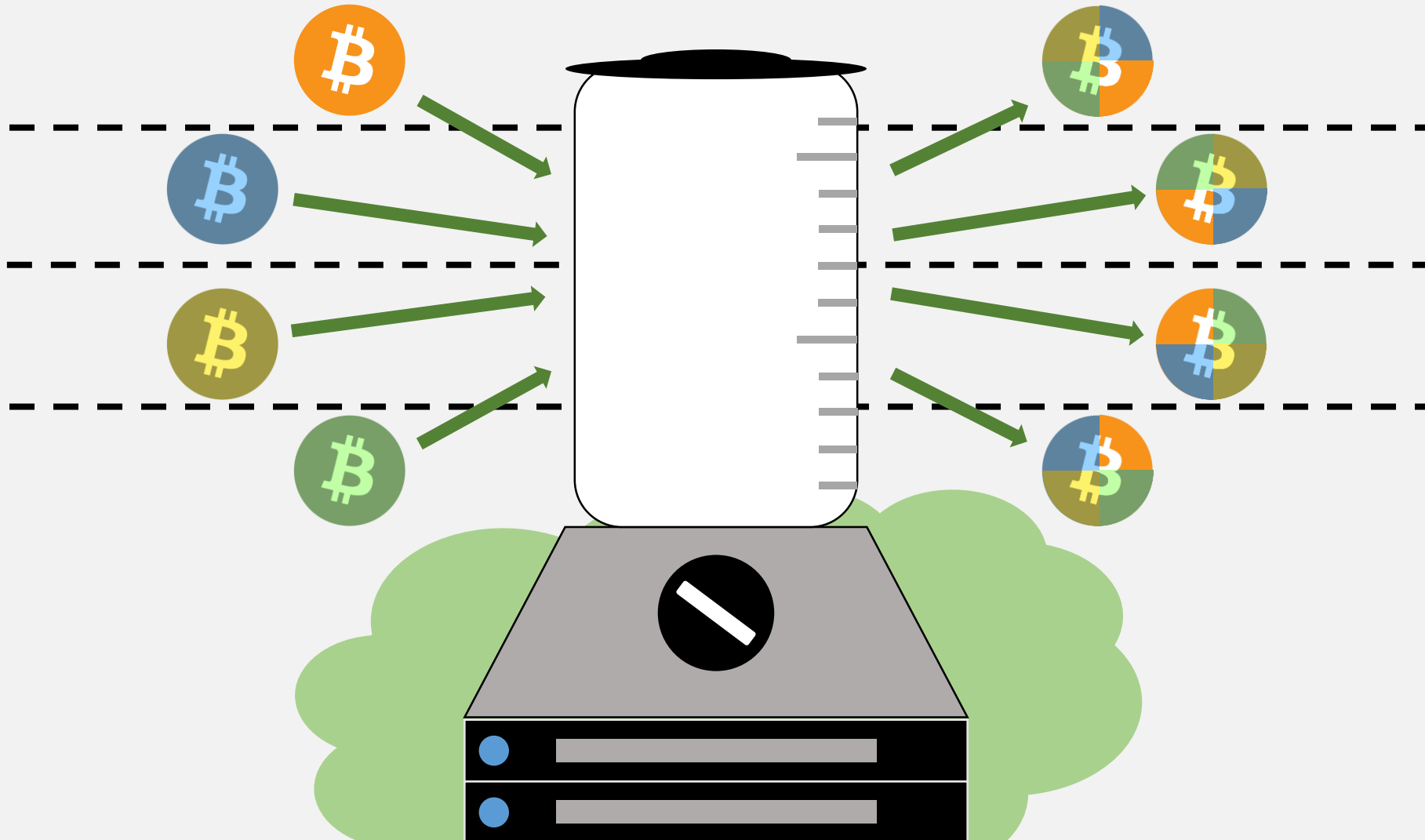
UNIVERSITY OF MINNESOTA  
**Driven to Discover<sup>SM</sup>**

**WU**  
WIRTSCHAFTS  
UNIVERSITÄT  
WIEN VIENNA  
UNIVERSITY OF  
ECONOMICS  
AND BUSINESS

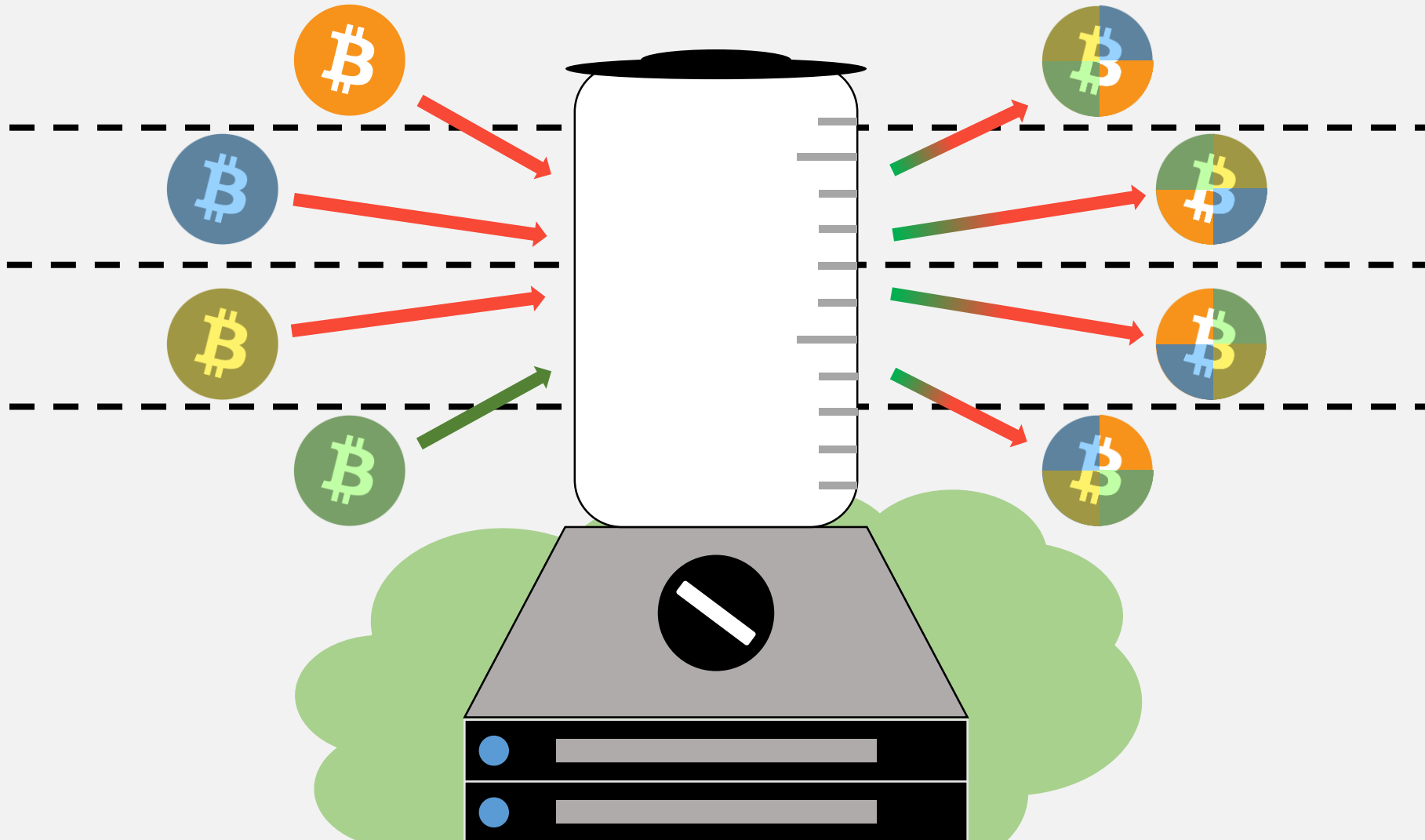


*CryptoUMN.com*

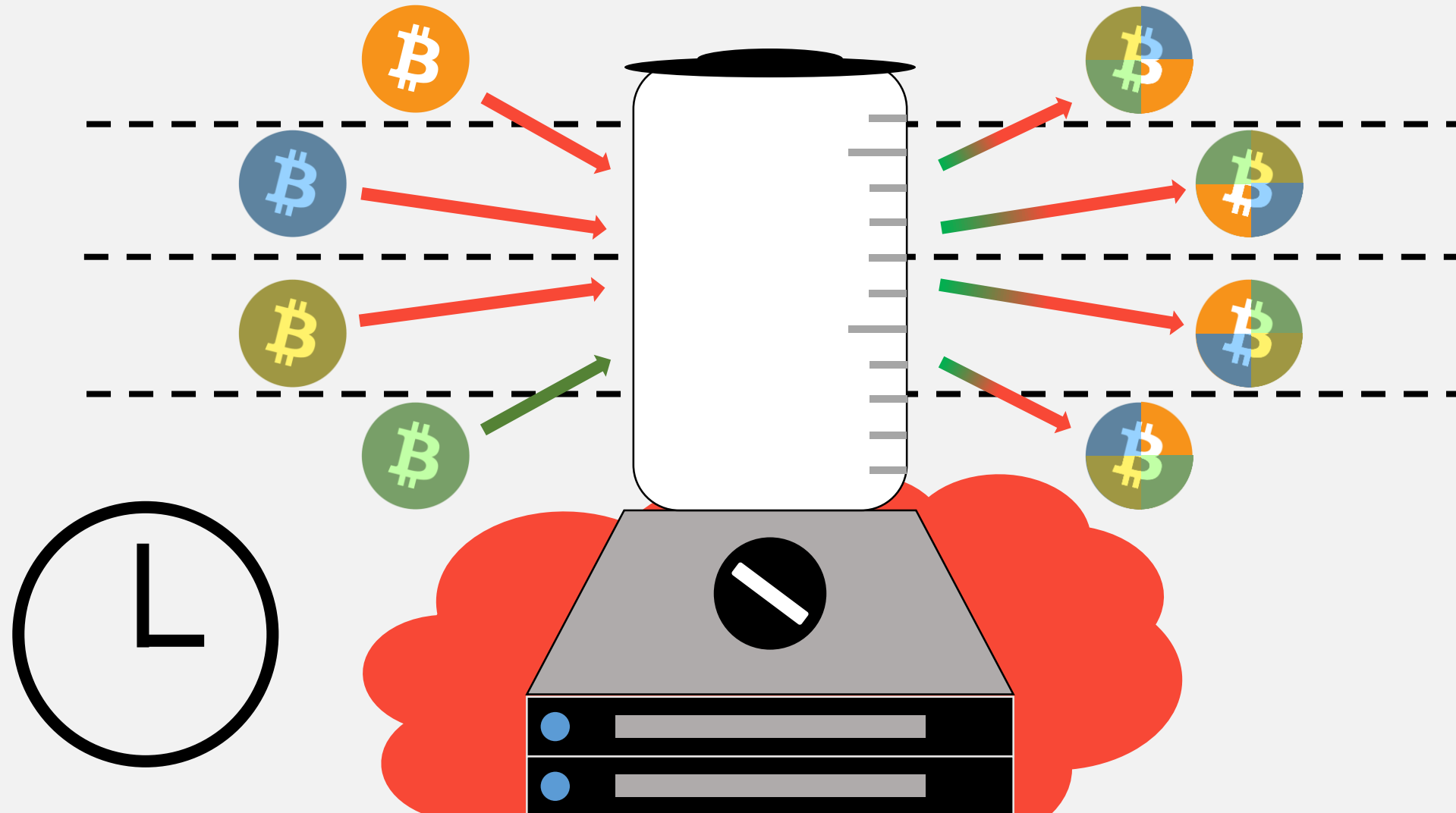
# People Started Adding Tools to Bitcoin



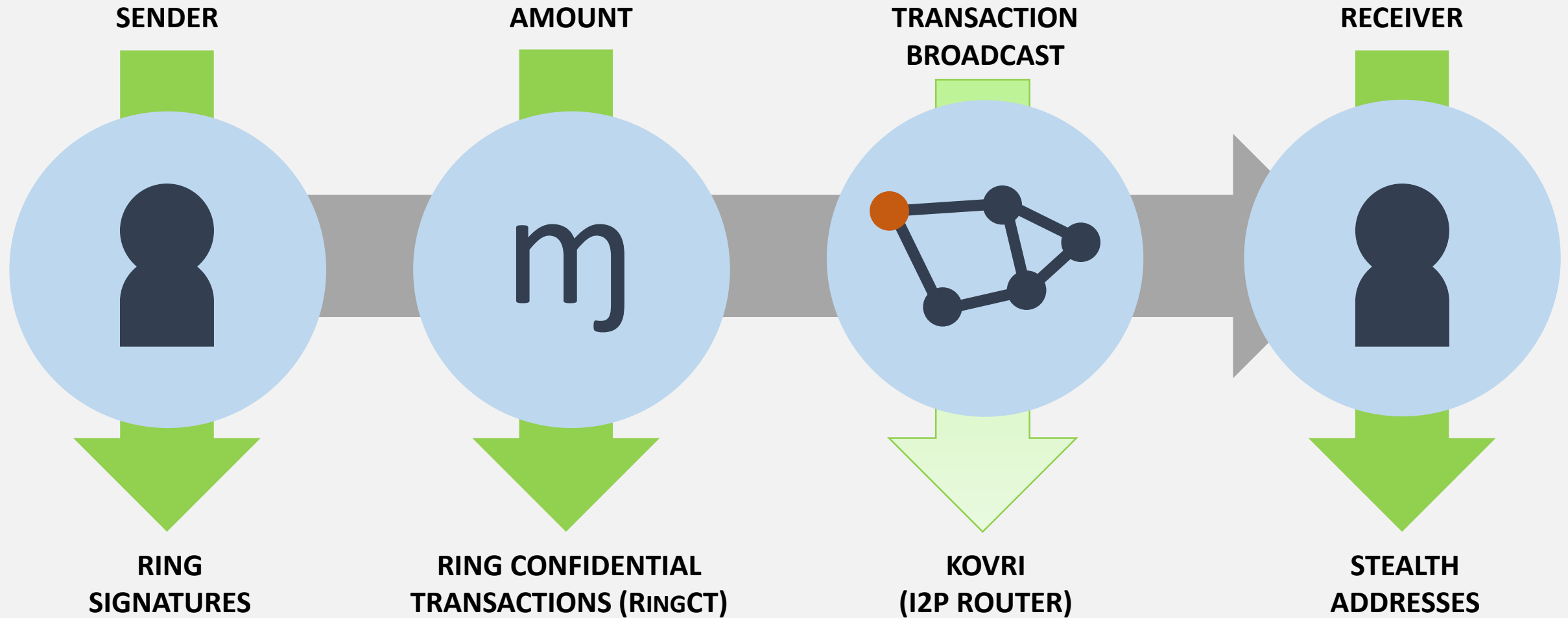
# People Started Adding Tools to Bitcoin



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# The Monero Difference



# Ring Signatures & RingCT

BLOCKCHAIN

1 (Tx ID e4hn4ifqyd5ed)

8 (Tx ID hng6iwfumwf8)

15 (Tx ID wn3f4diiijffwn)

2 (Tx ID eshgni5lsvnf74)

9 (Tx ID cb8vqfi8dfj65f)

16 (Tx ID 5 f8wnfdmmii)

3 (Tx ID wb4f5hdfdicnd)

10 (Tx ID fnidmfnu3dm8)

17 (Tx ID h8fn5mdfi4w)

4 (Tx ID nh5nogsefwjw)

11 (Tx ID twv8mf8dnfas)

18 (Tx ID n48gfwmfdki)

5 (Tx ID fgwinw3fwtk54)

12 (Tx ID h5o8mfdngkd)

19 (Tx ID fnidmnfdsam)

6 (Tx ID ybwnng8nengf)

13 (Tx ID 7nr8mrjffijdtm)

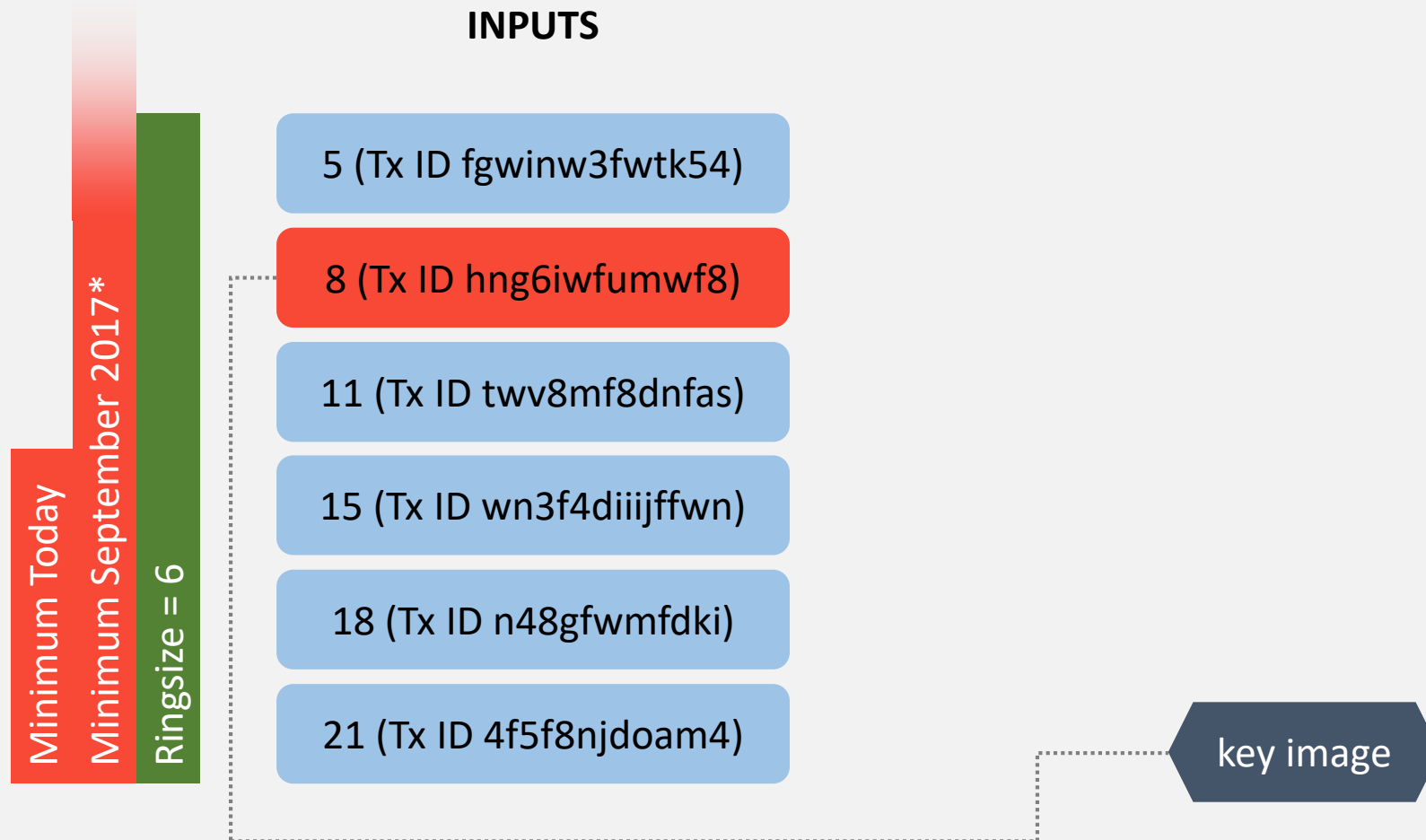
20 (Tx ID t4vn8lf8djer4)

7 (Tx ID e4bgn8flwwrj8)

14 (Tx ID f8n8madkrjmd)

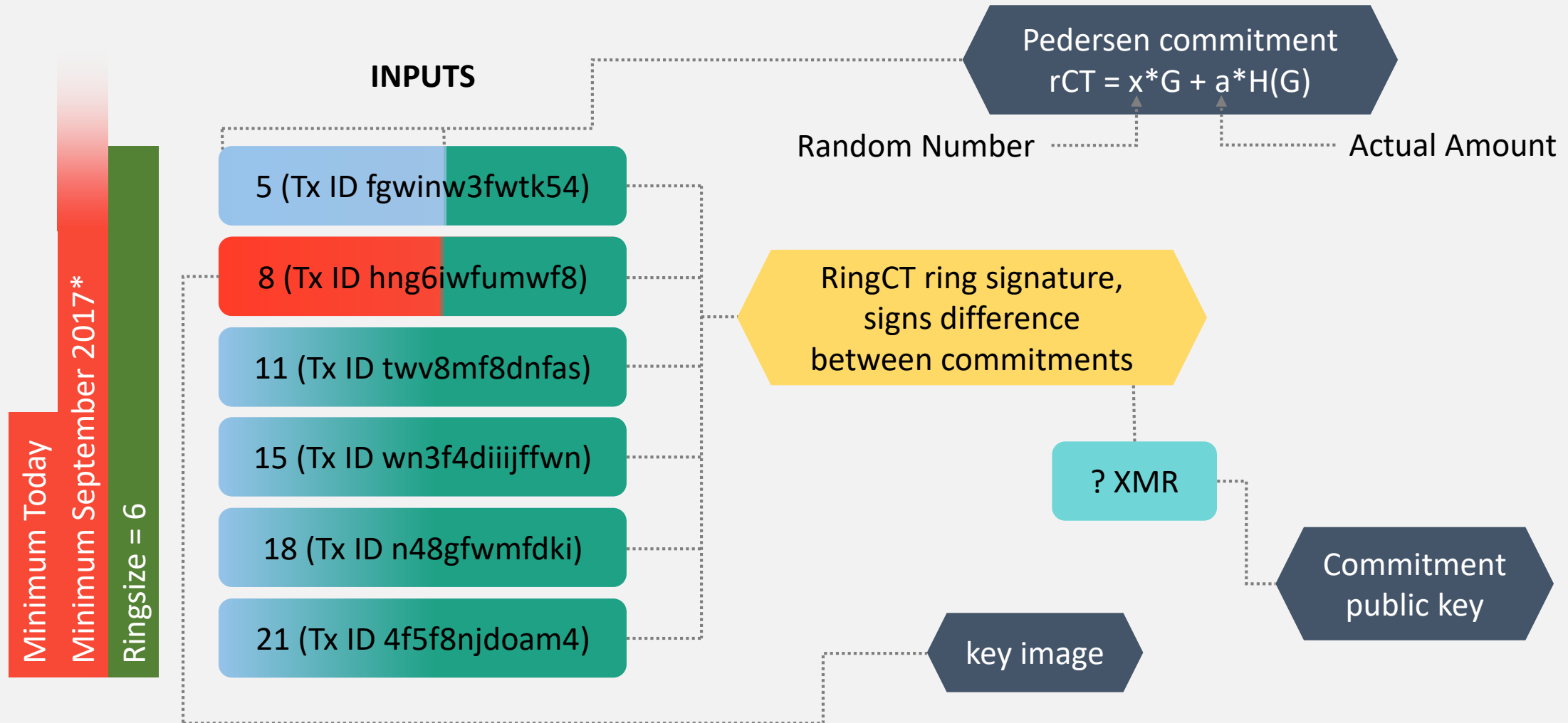
21 (Tx ID 4f5f8njdoam4)

# Ring Signatures & RingCT



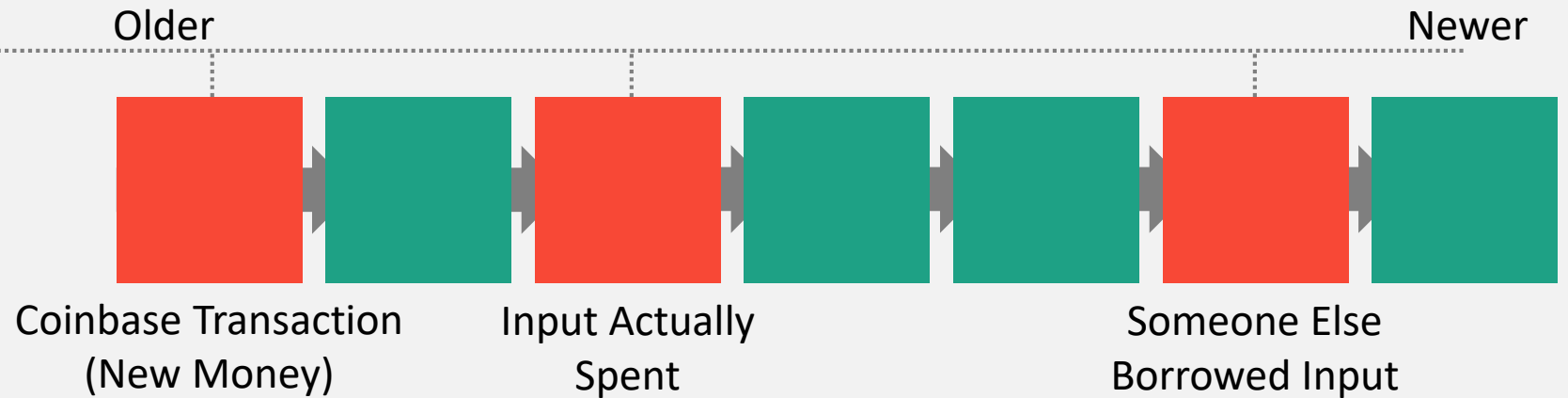
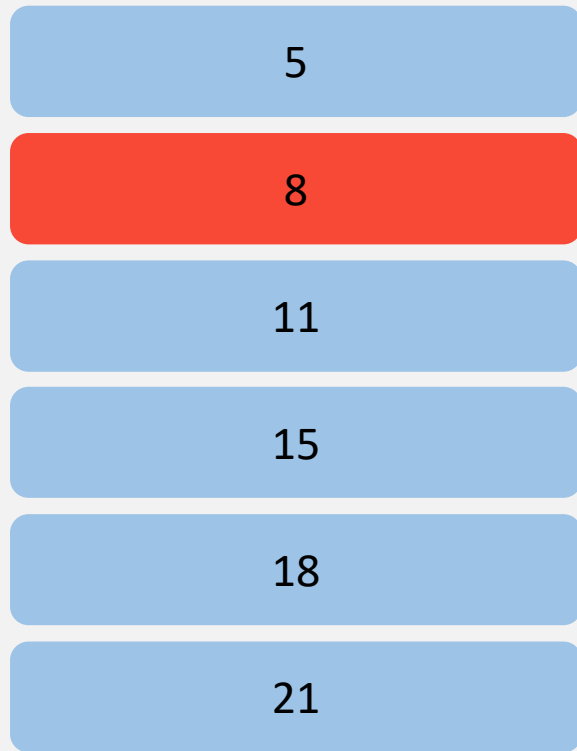


# Ring Signatures & RingCT

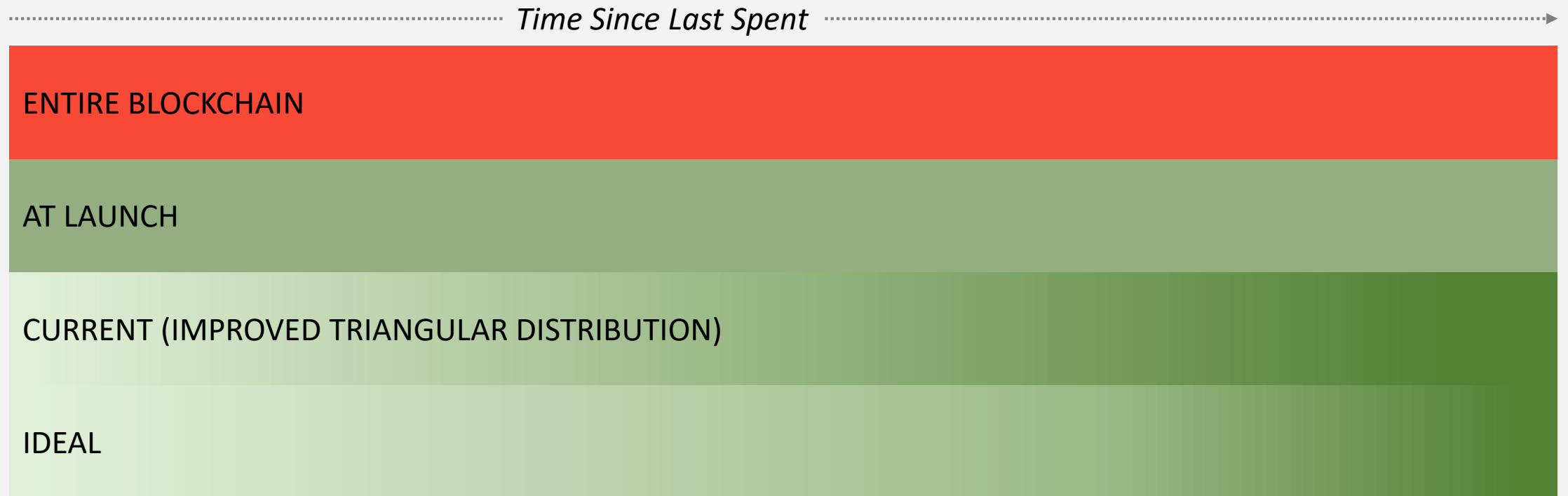


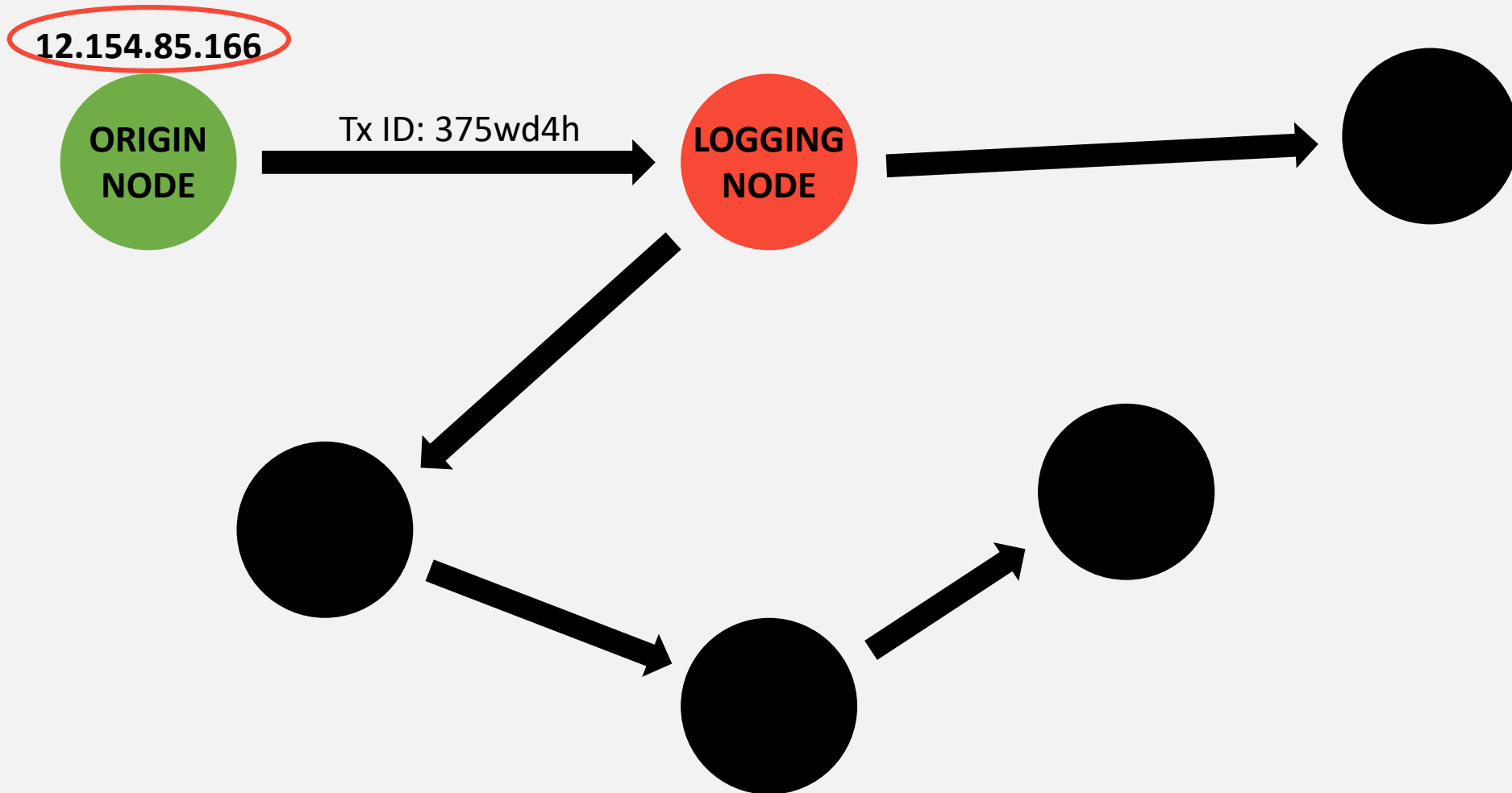
# Ring Signatures & RingCT

## INPUTS

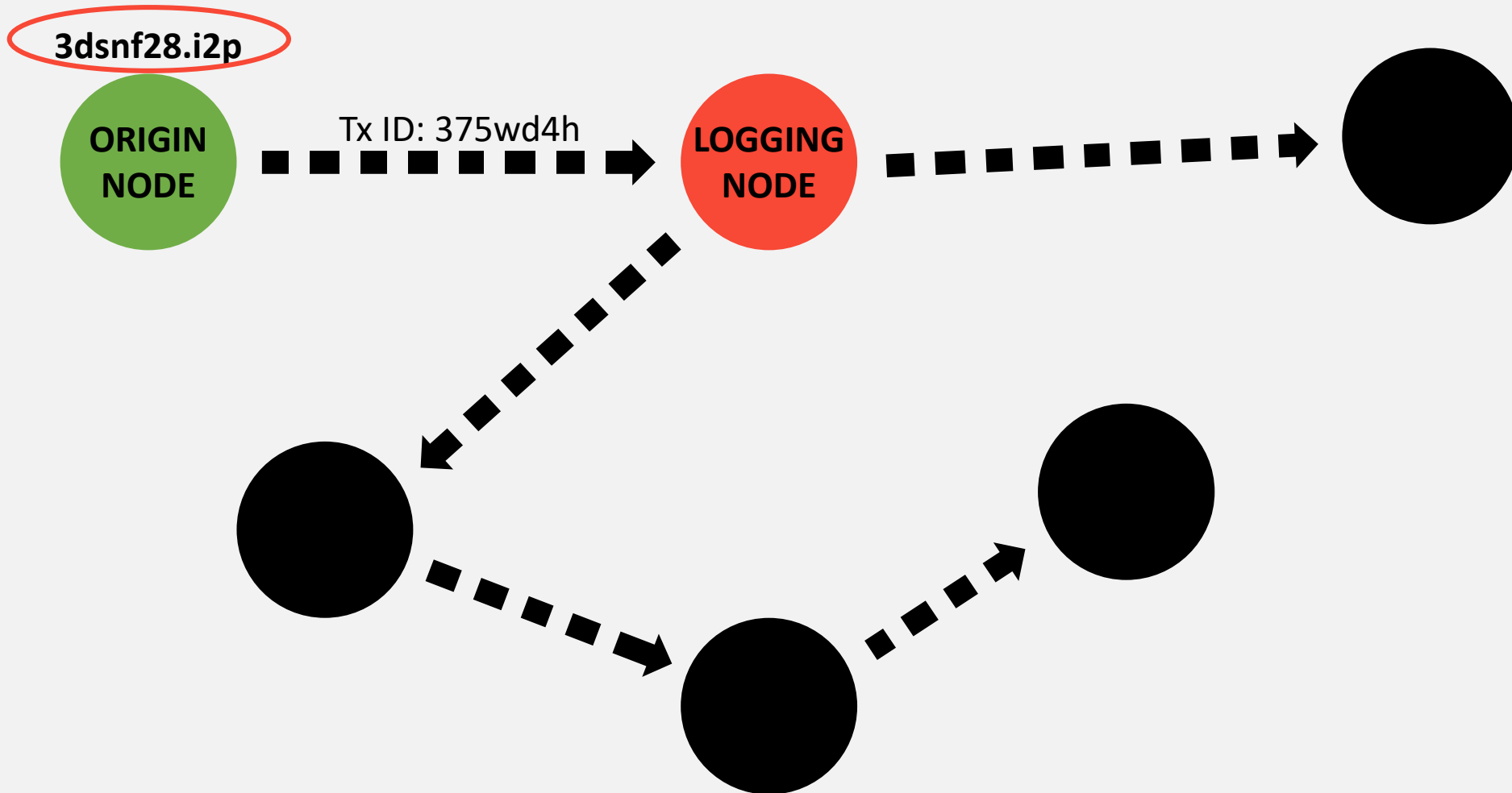


# How Inputs Are Selected

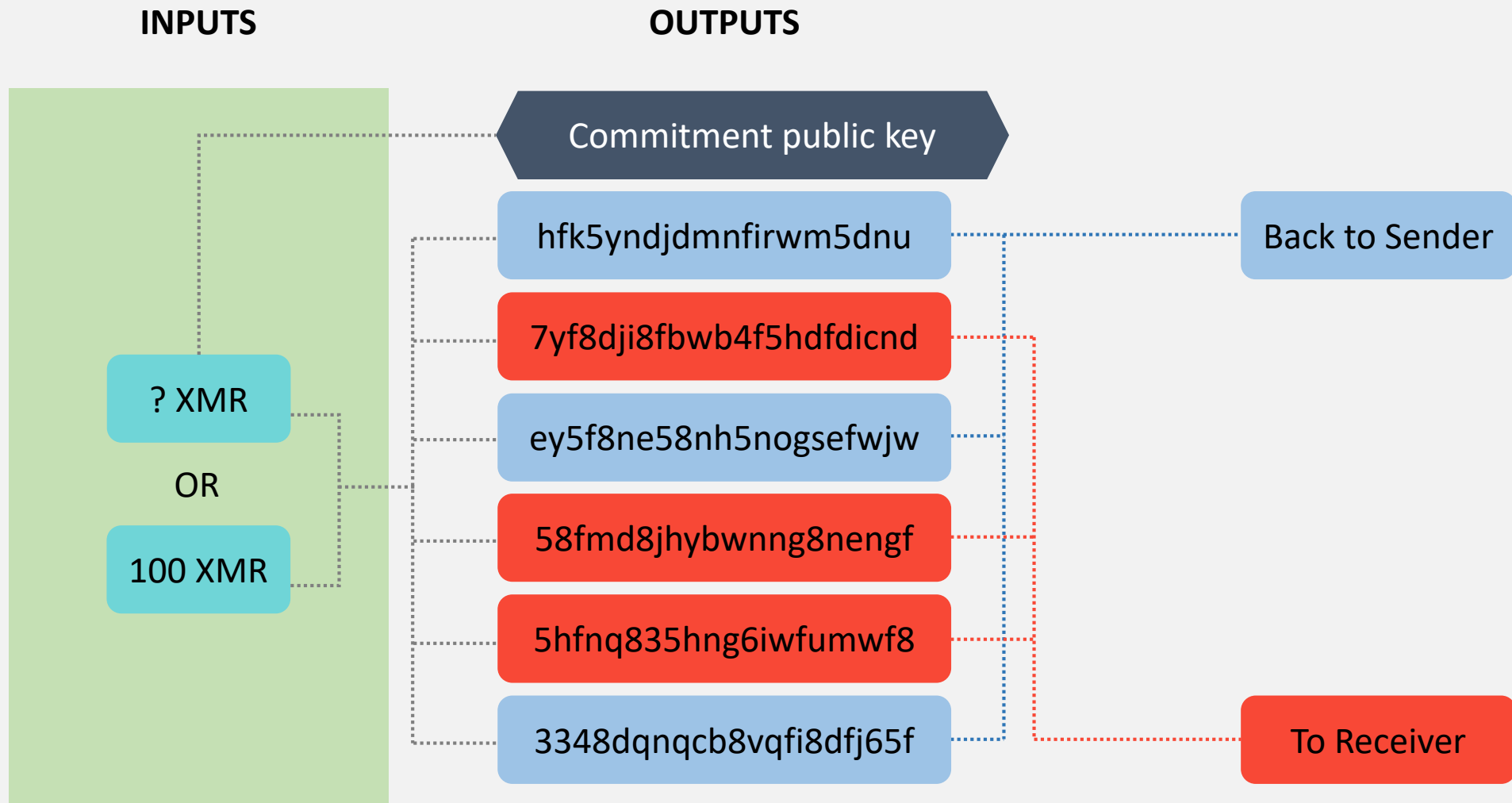




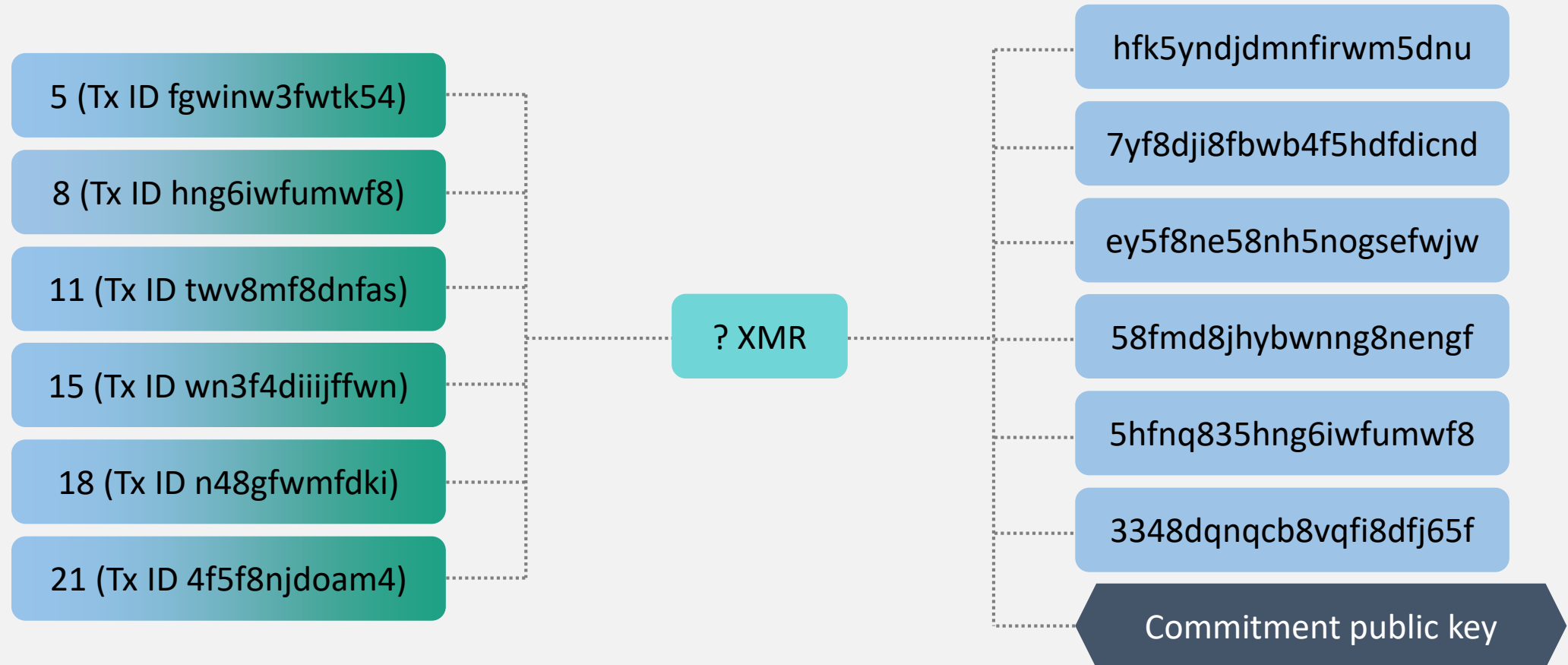




# Stealth Addresses



# Summary

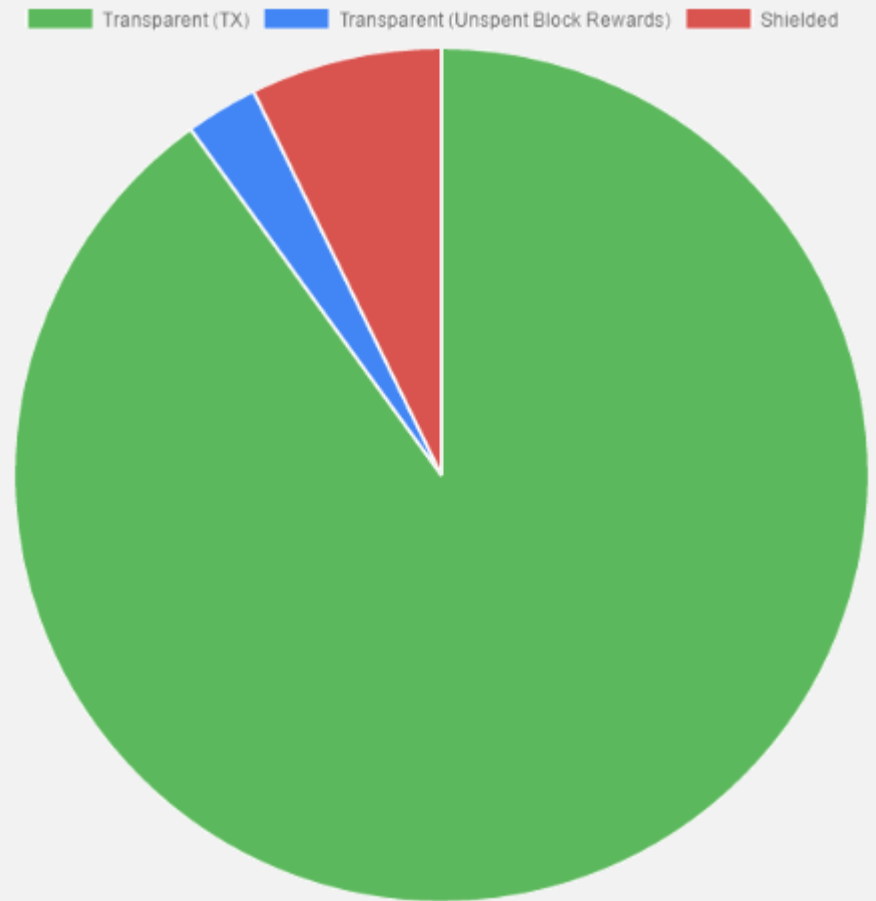


# Mandatory Privacy

## mixins used in transactions (%)

mixin:	none :(	1 - 2	3 - 9
last day	66.74	10.95	20.25
last week	66.11	6.96	24.76
last month	64.47	5.42	28.13
last year	73.04	7.36	18.16

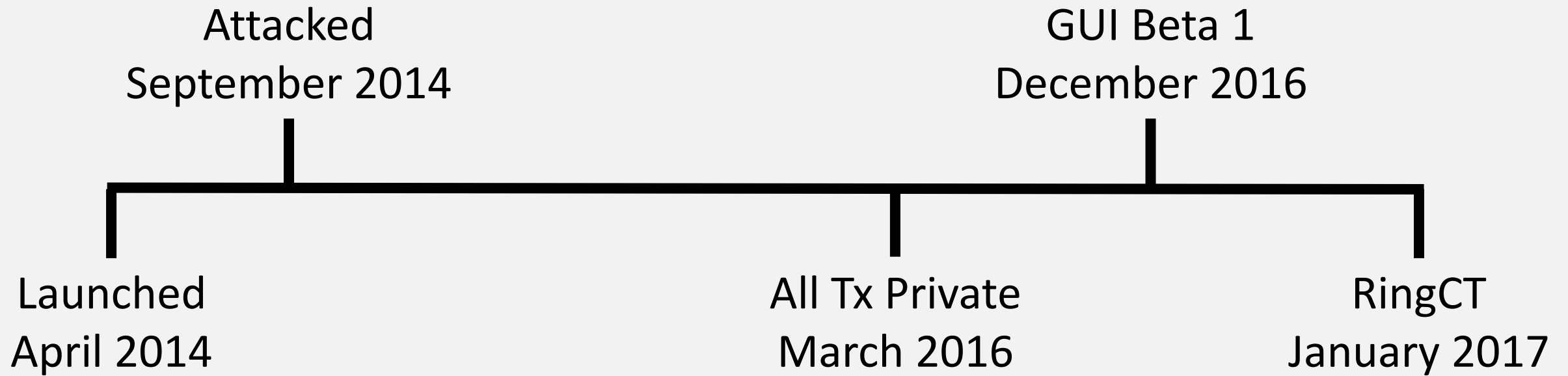
Source: MoneroBlocks.info 24 Feb 2016



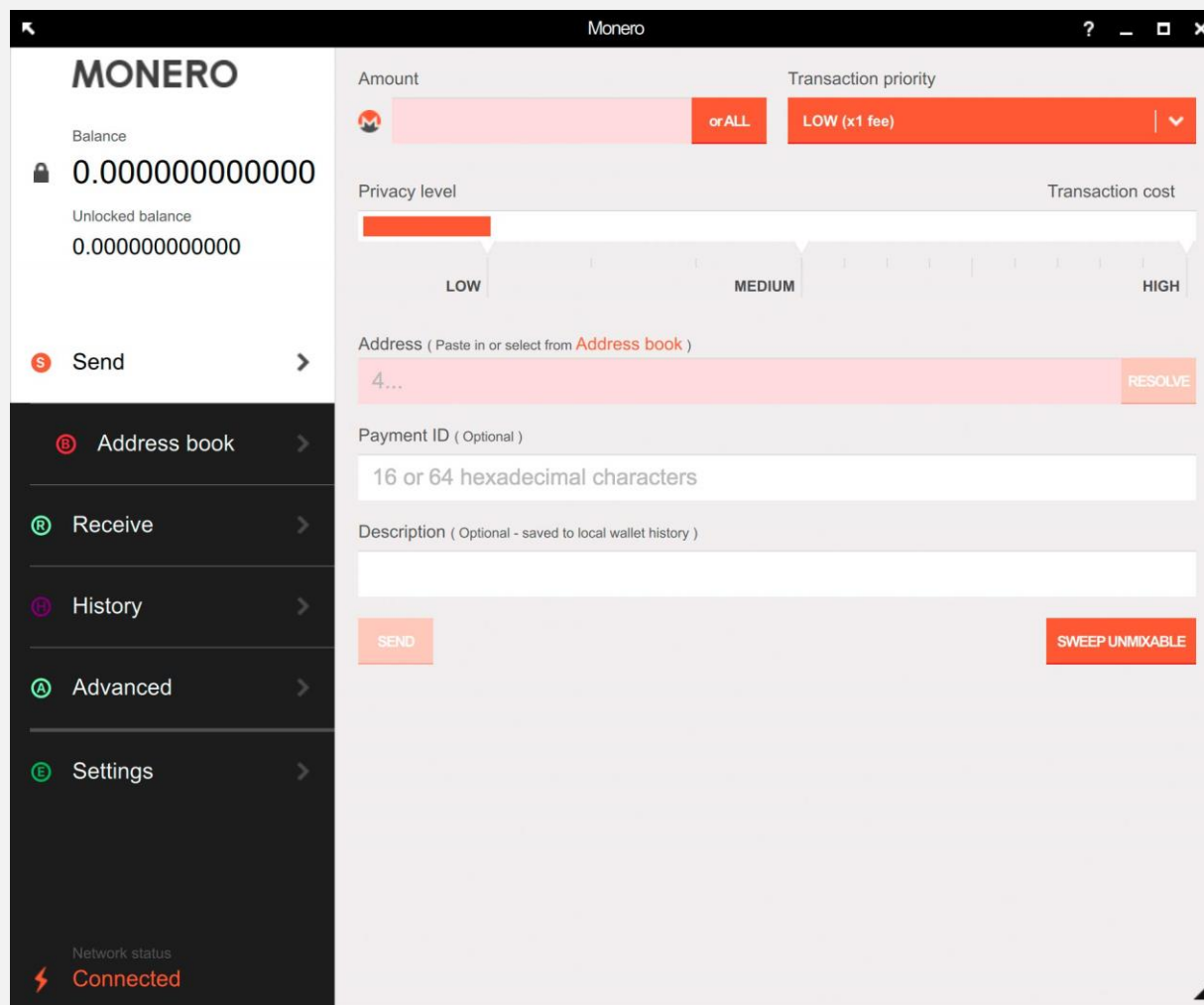
Source: zcha.in 15 March 2017



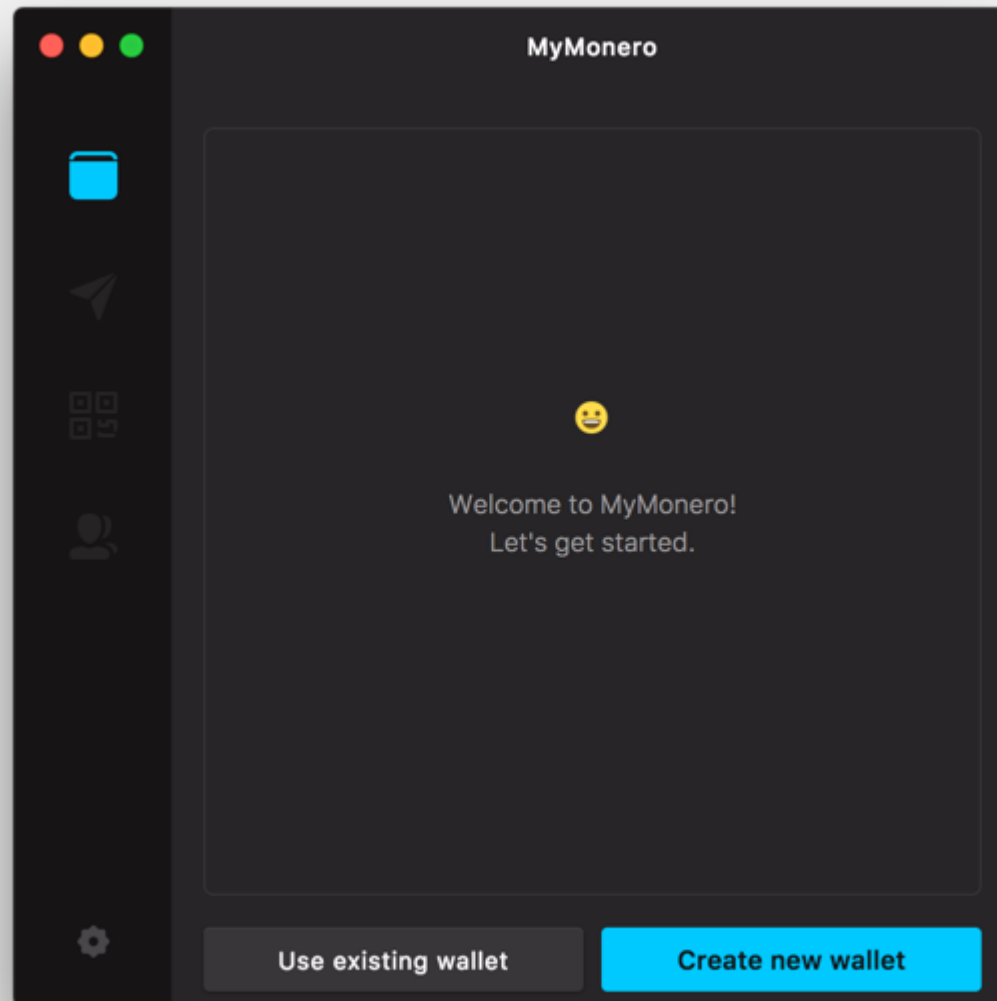
# A Brief History



# The Infamous GUI



# MyMonero Lightweight Wallet



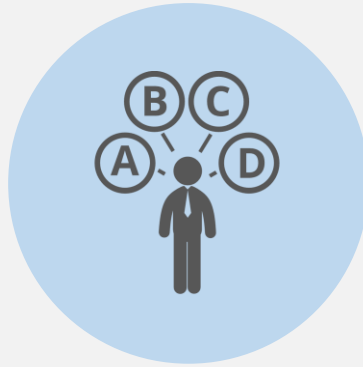
# Regulatory Compliance and Transparency

(with the View Key)



## Transparency

A view key is used to reveal all transactions for a Monero account, or just the key for a single transaction



## Selected Parties

View keys can be given to selected parties, or can be made public



## Charities

By publishing their view key, charities can invite easy public oversight



## Parents

Children can be given their own accounts, and parents can monitor their spending



# Monero Limitations



...but so close!

# Ongoing Development



Multisig



Sub-Addresses



Translations



Lightweight  
Wallet



RingCT  
Optimizations

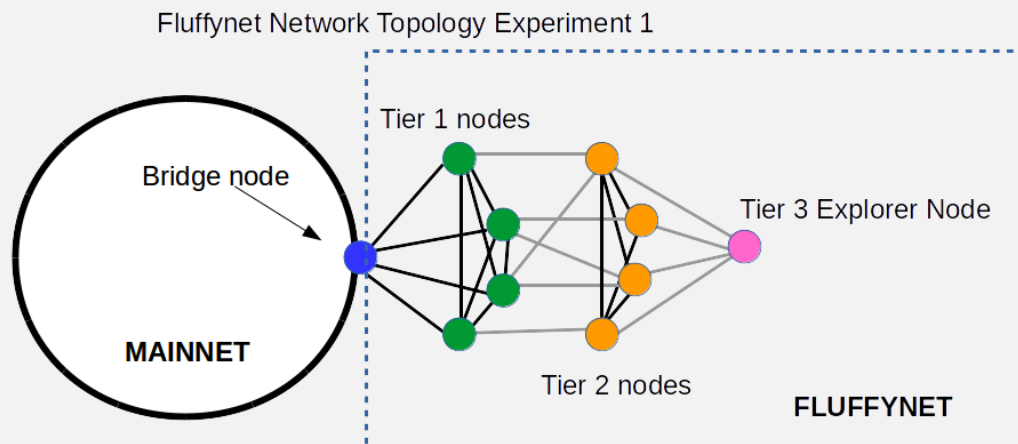
# Hardfork Schedule

January

April

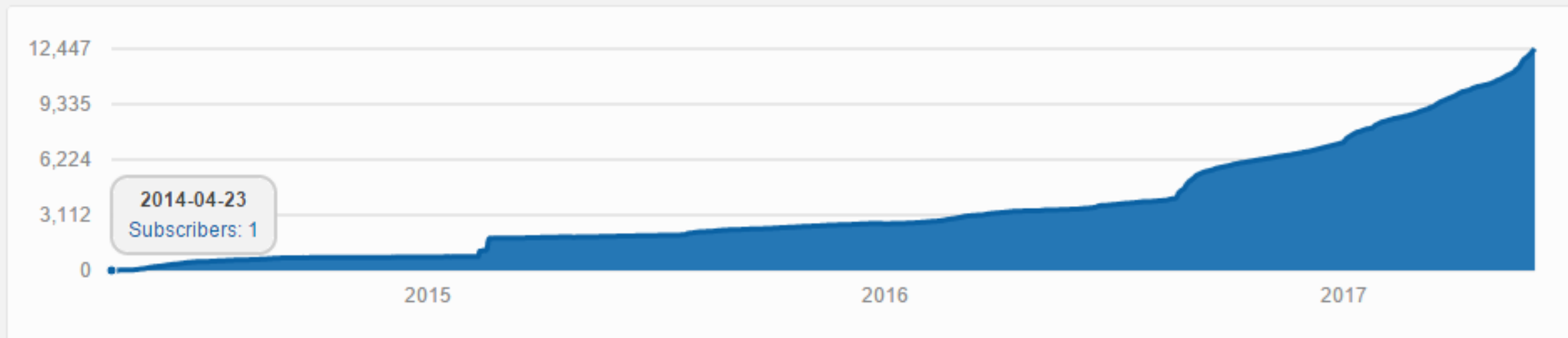
September

September 18<sup>th</sup>\*



- **Mandatory RingCT**
- **Minimum ringsize  $\geq 5$**  (likely 10)
- Fluffy blocks (in testing now)
- Improved input selection algorithm
- OMQ
- Sub-Addresses

# Community Growth

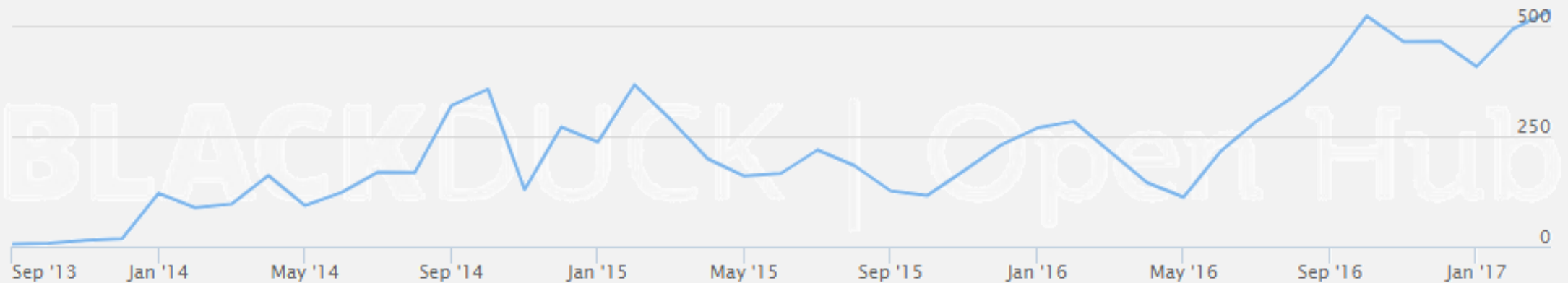




# Community Growth

Commits per Month

Zoom 1yr 3yr All



# Thank You!



**getmonero.org**



**/r/Monero**



**monero.stackexchange.com**



**justin@ehrenhofer.org**