# THE BITFURY GROUP ISSUES NEW WHITE PAPER ON SHARED SEND UNTANGLING IN BITCOIN BLOCKCHAIN

## *BREAKTHROUGH ANALYSIS FRAMEWORK AUGMENTS BLOCKCHAIN DATA*

### *WHITE PAPER AVAILABLE HERE*

The Bitfury Group today issued a white paper today about transaction tangling on the Bitcoin Blockchain.

**Key White Paper Findings**

This white paper focuses on the existing tangling techniques of "shared send" transactions and presents an approach to detect usage of mixing schemes.  First, we demonstrate that a substantial part of shared send transactions could be untangled.  Second, we propose a number of practically useful modifications to this challenge and we present the results of computational experiments on shared send untangling.

The white paper establishes a theoretical approach to shared send transaction analysis, which formulates the transaction untangling challenge in terms of the graph theory. We also describe several practically important modifications to the untangling problem. By reducing the untangling challenge to a well-known partition problem, we rigorously prove the computational complexity of shared send analysis.

Our computational experiments show that detection and analysis of shared send mixers is possible in real time for the majority of Bitcoin transactions. We experimentally determine that about 2.5% of all Bitcoin transactions possess the traits of shared send transactions, and that about half of these transactions could be untangled with moderate computational resources.

**Quote from Val Vavilov**

"The Bitfury Group is proud to be on the forefront of the Blockchain industry.  We are on the cutting-edge of Blockchain innovation and we regularly put out white papers that address some of the most important topics of our time.  The Bitfury Group is deeply committed to securing the Blockchain and expanding opportunities through the Bitcoin Blockchain for individuals, businesses, governments, organizations, NGOs and other institutions."

**About Shared Send and Transaction Tangling**

As Blockchain technology has become more mainstream, users have sought out ways to maintain its pseudonymity. The newest trend is that of "mixing" or "transaction tangling," as the users tangle, or mix, transaction histories from multiple sources. Shared send mixing is one of the major types of anonymization attempt techniques. While these additional anonymization techniques could be utilized innocuously, they are frequently used by bad actors, such as ransomware developers and hackers targeting Blockchain services, in an attempt to obfuscate their activity.

**About The Bitfury Group**

The Bitfury Group is the leading full service Blockchain technology company and one of the largest private infrastructure providers in the Blockchain ecosystem. The Bitfury Group develops and delivers both the software and the hardware solutions necessary for businesses, governments, organizations and individuals to securely move an asset across the Blockchain. The expertise of The Bitfury Group ensures successful, easy, fast, secure and cost effective connectivity to the Blockchain. The Bitfury Group is a global team of experts in technology, business, communications, security and civil society. The Bitfury Group believes the Blockchain can and will open new doors for global economic opportunity and prosperity, and its mission is to create and advance Blockchain applications that will further promote innovation and the advancement of the peer-to peer economy and the Economy of Things.

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