GOLD BAR INTEGRITY: BLOCKCHAIN AND SECURITY FEATURE

LBMA A&R 2019

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AGENDA

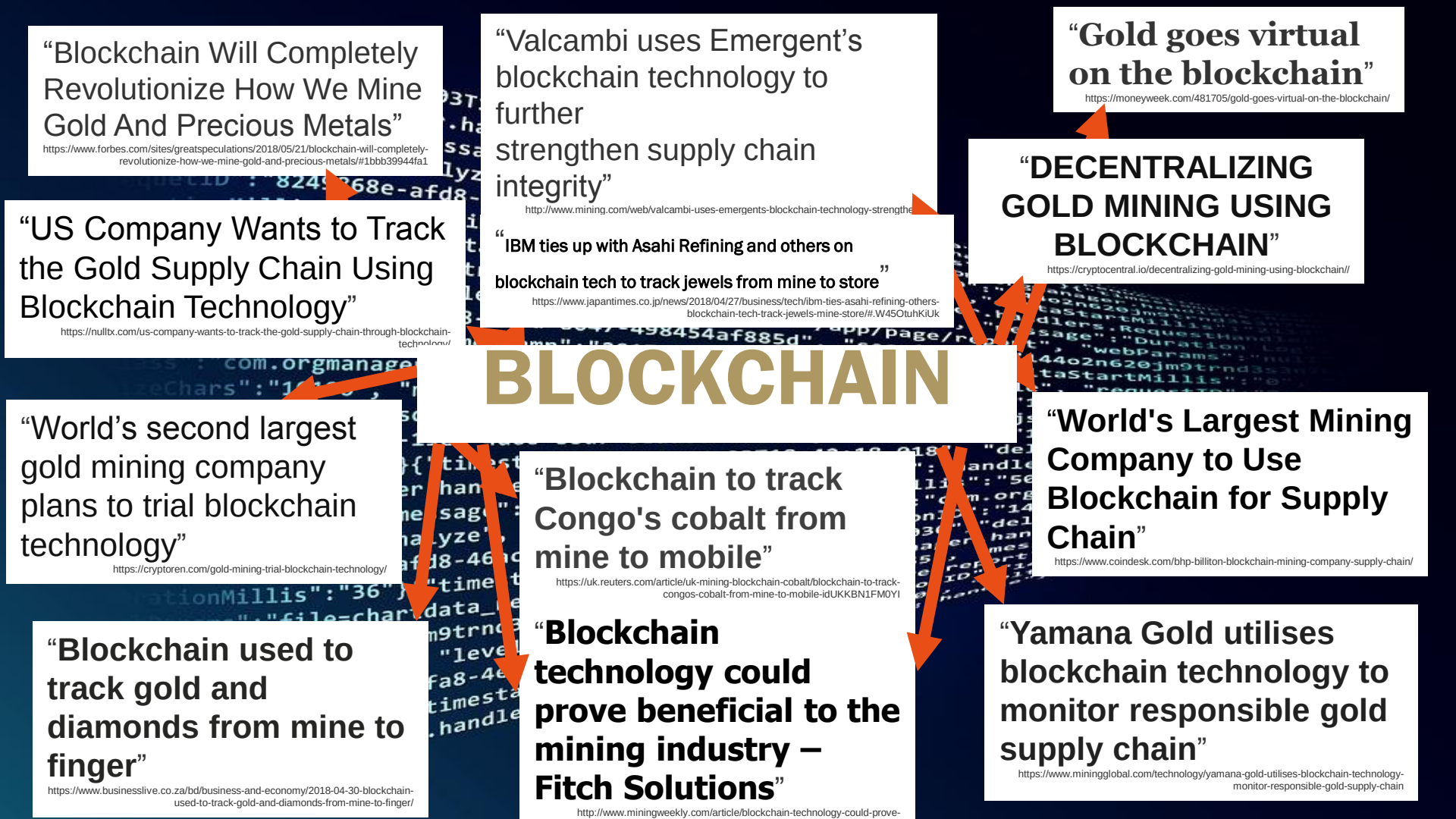
01 Current Security

02 Gold Bar Integrity

03 Security Feature

04 kilobars

“Be wary of man, woman attempting to sell fake gold near Olympia, deputies say”
https://www.theolympian.com/news/local/crime/article215637360.html#storylink=cpy
“Fake gold hits NYC”
https://nypost.com/2012/09/23/fake-gold-hits-nyc/
“Man accused of trying to sell fake gold bars”
https://www.klfy.com/news/man-accused-of-trying-to-sell-fake-gold-bars/872651596
“"This Could Be Huge": Gold Bar Certified By Royal Canadian Mint Exposed As Fake”
https://www.zerohedge.com/news/2017-10-30/could-be-huge-gold-bar-certified-royal-canadian-mint-exposed-fake
“Buyer beware: high quality fake gold bars being sold online, police say”
https://www.cbc.ca/news/canada/toronto/fake-gold-bars-barrie-1.4462510
FRAUD
“Bullion buyers beware: Fake bars and coins hit the market”
http://resourceclips.com/2017/11/01/bullion-buyers-beware-fake-bars-and-coins-hit-the-market/
“Concerns About Counterfeit Gold Grow Louder”
https://www.gainesvillecoins.com/blog/fake-gold-bars-fake-gold-eagles
“San Jose woman, 75, loses $12,000 in fake gold bar scam”
https://www.mercurynews.com/2010/12/17/san-jose-woman-75-loses-12000-in-fake-gold-bar-scam/
“The central bank of Ethiopia tried to sell fake gold bars worth millions”
https://born2invest.com/articles/central-bank-ethiopia-fake-gold-bars/
“45 fake gold bars seized, six men arrested”
https://www.todayonline.com/singapore/45-fake-gold-bars-seized-six-more-arrested


“Blockchain Will Completely Revolutionize How We Mine Gold And Precious Metals”
https://www.forbes.com/sites/greatspeculations/2018/05/21/blockchain-will-completely-revolutionize-how-we-mine-gold-and-precious-metals/#1bbb39944fa1
“Valcambi uses Emergent’s blockchain technology to further strengthen supply chain integrity”
http://www.mining.com/web/valcambi-uses-emergents-blockchain-technology-strengthe
“Gold goes virtual on the blockchain”
https://moneyweek.com/481705/gold-goes-virtual-on-the-blockchain/
“US Company Wants to Track the Gold Supply Chain Using Blockchain Technology”
https://nulltx.com/us-company-wants-to-track-the-gold-supply-chain-through-blockchain-technology/
“IBM ties up with Asahi Refining and others on blockchain tech to track jewels from mine to store”
https://www.japantimes.co.jp/news/2018/04/27/business/tech/ibm-ties-asahi-refining-others-blockchain-tech-track-jewels-mine-store/#.W45OtuhKiUk
“DECENTRALIZING GOLD MINING USING BLOCKCHAIN”
https://cryptocentral.io/decentralizing-gold-mining-using-blockchain//
BLOCKCHAIN
“World’s second largest gold mining company plans to trial blockchain technology”
https://cryptoren.com/gold-mining-trial-blockchain-technology/
“Blockchain to track Congo's cobalt from mine to mobile”
https://uk.reuters.com/article/uk-mining-blockchain-cobalt/blockchain-to-track-congos-cobalt-from-mine-to-mobile-idUKKBN1FM0YI
“World's Largest Mining Company to Use Blockchain for Supply Chain”
https://www.coindesk.com/bhp-billiton-blockchain-mining-company-supply-chain/
“Blockchain used to track gold and diamonds from mine to finger”
https://www.businesslive.co.za/bd/business-and-economy/2018-04-30-blockchain-used-to-track-gold-and-diamonds-from-mine-to-finger/
“Blockchain technology could prove beneficial to the mining industry – Fitch Solutions”
http://www.miningweekly.com/article/blockchain-technology-could-prove-
“Yamana Gold utilises blockchain technology to monitor responsible gold supply chain”
https://www.miningglobal.com/technology/yamana-gold-utilises-blockchain-technology-monitor-responsible-gold-supply-chain

CURRENT SECURITY

- **The Good Delivery Lists**
  - Known Brands
  - Known Counterparties
  - Control over Bar Marks
  - GDL Website
  - Large Bars
  - Strict Entrance Criteria
  - Governance and Enforcement
  - Proactive Monitoring
  - Incident Management Process
  - Local Market
  - Responsible Sourcing
- **The Vaults**

RFP – GOLD BAR INTEGRITY

Focusing on technology

New technology for supply chain provenance

- To help mitigate the risk faced throughout the life cycle of the bar, and help to securely record bar specific data (i.e. brand, origin, custody, location) on a trusted platform.
- 21 responses (19 focusing on blockchain)

Technology based security feature or security process adopted for bars

- To help ensure that any bar can be registered and subsequently be reliably and uniquely identified with high degree of confidence.
- 11 responses

SECURITY FEATURE

Update

Submissions could be grouped into four broad categories:

- Digital Imaging – high resolution images compared to centralised databases;
- Serial Number/QR Code – marking techniques linked to serial number databases;
- Proprietary Security Features – unique overt and covert solutions; and
- Non-Specific - potential available solutions to the market.

Update

- Two focus group meetings
- Very high level draft standards issued for comments

Scope and Implementation

- kilobars and large bars
- Start with London large bars

Next Steps

- Finalise standards Q3 2019
- Determine the rules/governance to implement the standards by Q3 2019

SUPPLY CHAIN PROVENANCE

Blockchain

- + Clarity on provenance, faster/efficient, auditable
- – Interoperability, onboarding, legal issues, cost

Proposed Next Steps

- Prioritise high risk ie trading of kilobars
  - Gather the data, look at centralised database (Which might not help with when a kilobar moves from HK to Mumbai).
  - Discuss with SGE re “kilobar database”
  - Can the data gathered through the centralised database move to a “kilobar blockchain’ solution, once interoperability becomes clearer?
  - Only refiners who achieve certain compliance requirements can be part of the kilobar blockchain
- Continue to remain engaged with service providers focusing on blockchain, and identify which service provider(s) achieve critical mass

PROPOSED NEXT STEPS

Summary

1. Consult and Finalise Security Feature (SF) standards
2. Finalise the rules to implement the SF Standards, with the intention to start with London large bars
3. Focus on the creation of a “kilobar database”, which can then potentially move onto a blockchain.
4. Remain engaged with service providers to identify critical mass

KILOBARS

“It’s not just about the large bars…”

There is no intention to make kilobars London Good Delivery; however, there is considerable merit in setting standards and contributing to the development of a responsible, global kilobar market.

SGE

The LBMA has previously developed a 9999 kilobar standard in conjunction with the Shanghai Gold Exchange. At the most recent meeting a number of enhancements to the standard were proposed including packaging specifications.

It is envisaged that a Memorandum of Understanding will be developed by the two organisations and it is hoped that this could be signed in Shenzhen.

Approved Status

LBMA is exploring developing a list of approved kilobar brands. This would not be part of the public-facing website but access to the list would be controlled and limited to members or licensees only.

Security Feature

As part of the Bar Integrity RfP, significant progress has been made with respect to security features. In the case of kilobars, this would relate to both the bar itself as well as the packaging.

Database

It is proposed that the LBMA will maintain a kilobar database to enhance the concept of approved brands.

ISO Committee (ISO/TC 174 Jewellery and precious metals)

There is potential for LBMA security feature specifications to be included.

9950

The LBMA will publish the specification for 9950 kilobars that was developed at the same time as the 9999 kilobar specification.

GDL Website

The GDL website does contain a modest amount of information pertaining to kilobars. It is proposed that any brands included on the approved list must have their specifications included on the GDL website.

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