Name: Ronmar John S. Sabado, Bladymer A. Ybalio   Date: March 31, 2024,

Name: Development of Traceability System for Cacao in Southern Philippines Date: August 29, 2024

Title of Invention: Cacao Traceability Mobile Application

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| Concept 1 | AND | Concept 2 | AND | Concept 3 | AND | Concept 4 |
| Mobile and Web Application |  | Automated Transactions |  | Blockchain Technology |  | [G06Q10/08](https://patents.google.com/?q=G06Q10%2f08&peid=620c7e783a100%3A28%3A4d771ca5) |
| Camera-based scanner | QR code Generator | G06Q20/3274 | QR code scanner |
| [G06Q50/02](https://patents.google.com/?q=G06Q50%2f02&peid=620c80d27dc00%3A1b%3A1a586405) | [G06Q30/06](https://patents.google.com/?q=(supplychain+traceability)&q=G06Q30%2f06&peid=620c803a79fa8%3A1c%3A3f567096) | [G06Q30/06](https://patents.google.com/?q=(supplychain+traceability)&q=G06Q30%2f06&peid=620c803a79fa8%3A1c%3A3f567096) | Batch Creation |
| Farmer Profiling | GeoTracking |  |  |
| Cacao Traceability | Product Tracing | [G06Q10/0833](https://patents.google.com/?q=(supplychain+traceability)&q=G06Q10%2f0833&peid=620c7fd946ec0%3Ab5%3A71b32839) | Feedback |

Features

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| Features | Technical Effect |
| GeoTracking | * Easily track the location on the farmer, Consolidator and BARBCO at the Google Map |
| Product Tracing | * Beans Variety, Clone and Types, Date Harvested and Total Weight. * Assure Quality of Beans variety from specific farm |
| Profiling Farmer | * Selection of Farmers where support from Govt is needed. * Easy to trace where the beans are collected. |
| Blockchain | * Ensure transaction security and traceability. |
| Batch Creation | * Ensures the Batch Location, Beans Variety, Clone and types. * Manage the Inventory of the Batch and release batch release. |
| QR code Generated and Scanner | * Store the details of the Batch for automation of transactions. * Store the batch information upon releasing the Batch for the traceability. |
| Data Analytics | * Manage Farmers and Consolidator Earnings and total weight they sell. * Manage Barbo which beans are in demand. |

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| Traco | | HATTS | |
| Features | Process | Features | Process |
| Traceability | Trace the beans harvest, variety, clone, and beans type, fertilizers and the details about the farmers and their location | Traceability | Trace the beans harvest date and ingredients, fermentation and production date. |
| Geolocation | Google map location added where it can trace where the beans is harvested for accuracy |  |  |
| Profiling | Farmers input their credentials such as name, valid ID, contact number and farm details such as farm hectares, location, technologies and post-harvest operation. | Profiling | Admin input farmer profile, full name address and its location. |
| Feedback | Buyer can send their feedback on the batch they purchase |  |  |
| Blockchain | Public Ledger Blockchain for transparency and security of the transaction, batch information and feedback of the buyer | Blockchain | Smart Contract Ledger blockchain for transparency and security of the transaction and ingredient of the beans and beans certificate. |

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| Traco | | [WO2021130341A1](https://worldwide.espacenet.com/patent/search?q=pn%3DWO2021130341A1) | |
| Features | Process | Features | Process |
| Traceability | Trace the beans harvest, variety, clone, and beans type, fertilizers and the details about the farmers, consolidator manufacturer to the consumer and the location of the farmer, consolidator | Traceability | Trace the Beans harvest date, farmers location and every destination |
| Geolocation | Google map location added where it can trace where the beans is harvested for accuracy | Geolocation | Uses an IOT device to track and locate the destination of the batch |
| Feedback | Buyer can send their feedback on the batch they purchase |  |  |
| Blockchain | Public Ledger Blockchain for transparency and security of the transaction, batch information and feedback of the buyer | Blockchain | IBM’s Blockchain technology for transparency and security it stores the origin, farmer to farmer to the buyer and beans certificate. |

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| Traco | | [CN116883017A](https://worldwide.espacenet.com/patent/search?q=pn%3DCN116883017A) | |
| Features | Process | Features | Process |
| Traceability | Trace the beans harvest, variety, clone, and beans type, fertilizers and the details about the farmers, consolidator manufacturer to the consumer and the location of the farmer, consolidator | Traceability | Uses IOT sensor to trace the product and temperature and humidity of the product. |
| Geolocation | Google map location added where it can trace where the beans is harvested for accuracy | Geolocation | Uses IOT Sensors to track real time location |
| Feedback | Buyer can send their feedback on the batch they purchase |  |  |
| Blockchain | Public Ledger Blockchain for transparency and security of the transaction, batch information and feedback of the buyer | Blockchain | Smart contract blockchain to securely and transparently track each step in the fruit supply chain, preventing tampering and ensuring data authenticity |

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| Traco | | [CN111445272A](https://worldwide.espacenet.com/patent/search?q=pn%3DCN111445272A) | |
| Features | Process | Features | Process |
| Traceability | Trace the beans harvest, variety, clone, and beans type, fertilizers and the details about the farmers, consolidator manufacturer to the consumer and the location of the farmer, consolidator | Traceability | Uses IOT Sensor to trace the location of the product, conditions, logistic information and each stage of the point of sale. |
| Geolocation | Google map location added where it can trace where the beans is harvested for accuracy | Geolocation | Uses IOT sensor to track the product and GPS location. |
| Feedback | Buyer can send their feedback on the batch they purchase and store it in the Blockchain | Feedback Resolution | Consumers can send their feedback on the product |
| Blockchain | Public Ledger Blockchain for transparency and security of the transaction, batch information and feedback of the buyer | Blockchain | Smart Contract Ledger Blockchain for transparency and security for agriculture information product to production and sales. |

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| Traco | | KR20200091237A | |
| Features | Process | Features | Process |
| Traceability | Trace the beans harvest, variety, clone, and beans type, fertilizers and the details about the farmers, consolidator manufacturer to the consumer and the location of the farmer, consolidator | Traceability | Trace the Origin of the livestock, farm and certificate of the livestock. |
| Geolocation | Google map location added where it can trace where the beans is harvested for accuracy | Geolocation | Uses IOT with GPS to trace the location of the livestock. |
| Feedback | Buyer can send their feedback on the batch they purchase and store it in the Blockchain |  |  |
| Blockchain | Public Ledger Blockchain for transparency and security of the transaction, batch information and feedback of the buyer | Blockchain | Hyper ledger blockchain is use for transparency and security of the lifecycle data of the livestock, vaccination, movement and slaughter. |

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| **CONCEPT** | **IPC** | **DESCRIPTION** |
| Batch Creation | [G06Q10/08](https://patents.google.com/?q=G06Q10%2f08&peid=620c7e783a100%3A28%3A4d771ca5) | • Logistics, e.g. warehousing, loading or distribution; Inventory or stock management |
| Traceability | [G06Q30/0185](https://patents.google.com/?q=(traceability+supplychain+system)&q=G06Q30%2f0185&peid=620c7f0bbef48%3A87%3A7e38a237) | • • Product, service or business identity fraud |
| [G06Q10/0833](https://patents.google.com/?q=(supplychain+traceability)&q=G06Q10%2f0833&peid=620c7fd946ec0%3Ab5%3A71b32839) | • • • Tracking |
| Transactions | [G06Q30/06](https://patents.google.com/?q=(supplychain+traceability)&q=G06Q30%2f06&peid=620c803a79fa8%3A1c%3A3f567096) | • Buying, selling or leasing transactions |
| Cacao Beans | [G06Q50/02](https://patents.google.com/?q=G06Q50%2f02&peid=620c80d27dc00%3A1b%3A1a586405) | • Agriculture; Fishing; Forestry; Mining |
| Product tracing | G06Q20/3274 | • • • • using a pictured code, e.g. barcode or QR-code, being displayed on the M-device |