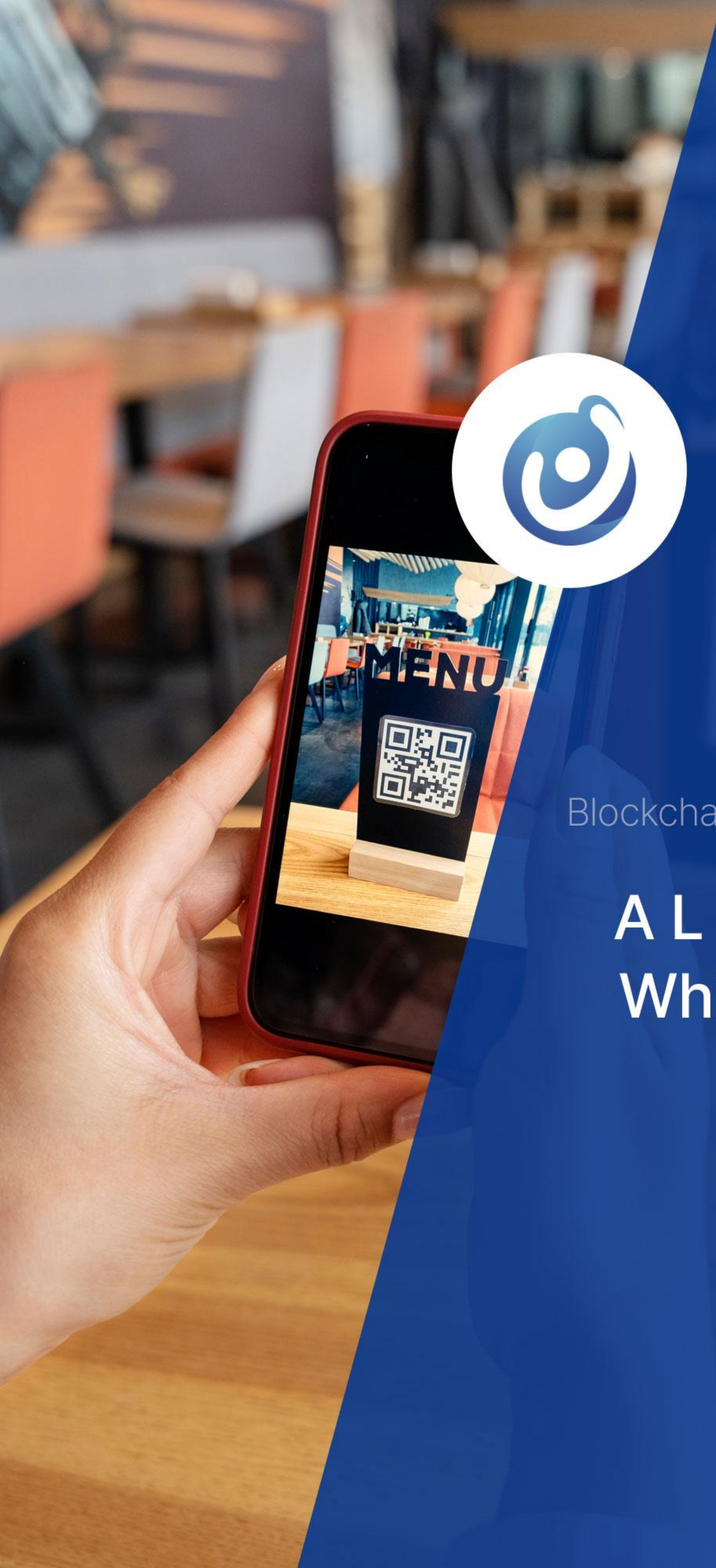


Blockchain Digital Platform

A L I V COIN
White Paper

Ver 1.0

CONTENTS

CONTENTS

Introduction

I Introduction

1. Introduction

The advancement of digital technology in modern society is transforming many industries. Particularly in the shopping and dining sectors, social commerce centered around digital platforms such as SNS is rapidly emerging. Consequently, there is a growing demand for existing ordering and payment systems, as customers seek more efficient and convenient services. This white paper aims to present an innovative delivery app, QR table order system, and reservation and waiting management system utilizing Aliv Coin. These systems are designed to provide convenience and benefits to customers while maximizing operational efficiency for stores, ultimately aiming to increase sales.

2. Background

In modern society, shopping and dining through SNS have become commonplace, revealing inconveniences in existing ordering and payment systems. Specifically, table order and QR payment systems cause user discomfort due to spatial constraints and system downtimes. Additionally, the simplicity of existing ordering functions falls short of meeting the diverse demands of customers. Aliv Coin, a digital currency designed to address these issues, offers users a more convenient payment method along with various rewards. This is expected to enhance customer satisfaction and contribute to increased sales for stores.

I Introduction

3. Purpose

The Aliv coin was designed with the following purposes.

● Improving customer experience

Through SNS and QR codes, we simplify the ordering and payment process to enhance customer convenience.

● Increase in sales

Promote through SNS and increase the number of orders in the store through the QR table order system, and increase sales through delivery orders.

● Improving operational efficiency

Through a system that manages waiting and delivery orders, we increase the efficiency of store operations.

● Encouraging customer participation

We encourage active participation by providing Aliv coins to customers who participate in SNS promotional activities.

Features and System Configuration

1. Social Network Order System
2. QR Code Table Order System
3. Waiting List Management System
4. SNS Promotion Reward System
5. Delivery Management System

Ⅱ Features and System Configuration

1. Social network order system

Exposure and search for products

Products can be exposed on SNS feeds and stories, and easily found through hashtag and keyword searches.

Order and payment

It is possible to order products within the SNS platform and various payment methods are supported.

Order management

Real-time order status tracking and order history confirmation are available.

Customer support

We provide quick customer support through SNS channels.

II Features and System Configuration

2. QR code table order system

01

Generate and manage QR codes

Generate and distribute unique QR codes for each table.

02

Digitalization of menu

Through scanning the QR code, customers can check the menu and place an order on their smartphones.

03

Order and payment

We support various payment methods, and real-time order management is possible.

04

Promotions and discounts

We can offer special promotions to customers who access through QR codes.

3. Waiting order management system

Waiting registration and management

You can register on the waiting list by scanning the QR code.

Real-time waiting status

Both customers and employees can check the waiting order and waiting time in real-time.

Notification Function

Customers can conveniently wait by receiving waiting status through push notifications.

Reservation Function

You can plan your visit to the store through advance reservation.

II Features and System Configuration

4. SNS promotion reward system

Participation in promotional activities

By participating in SNS promotional activities, you can accumulate Aliv coins as rewards.

Coin accumulation and usage

Accumulated coins can be used for payment at stores, and real-time accumulation and usage history can be checked.

Promotion integration

We provide additional bonus coins for participating in promotional activities to encourage participation.

5. Delivery management system

Delivery Order

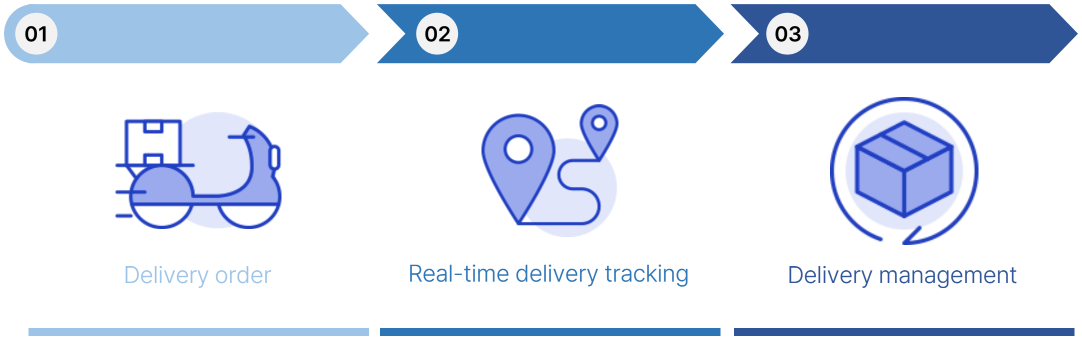
You can easily place a delivery order through SNS.

Real-time Delivery Tracking

Customers can check the delivery progress in real-time and receive estimated arrival time.

Delivery Management

Stores can manage delivery orders in real-time and update the delivery preparation status.



Technology and Vision

III Technology and Vision

1. Technical implementation

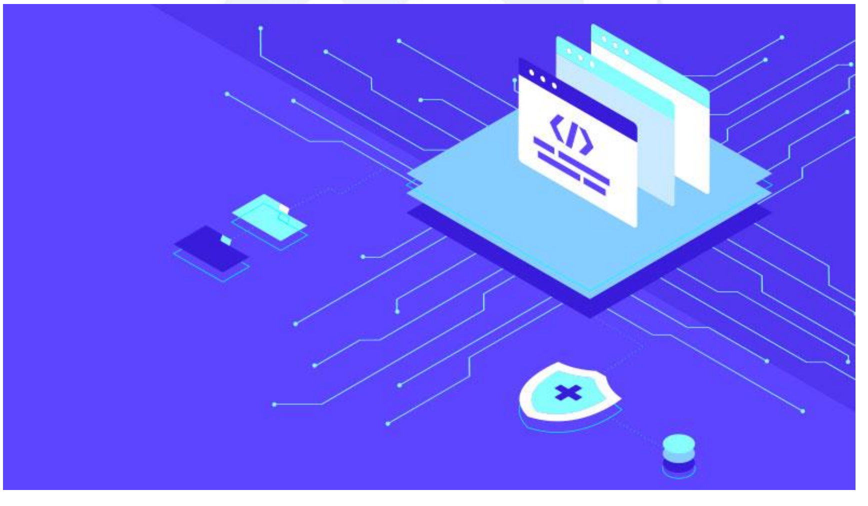
This system is implemented through the following technical implementations.

Frontend

A mobile-friendly interface is built using React or Vue.js, with enhanced integration with SNS APIs.

Backend

The server is configured using Node.js and Express, and MySQL or MongoDB is utilized as the database.



Communication

Data communication between the frontend and backend is implemented through RESTful API, and payments are managed via a secure payment gateway.

Blockchain Technology

Blockchain technology is utilized to ensure the transparency and security of Aliv Coin.

III Technology and Vision

2. DataSecurity

The following measures are taken to ensure data security.

- We manage users' personal information securely through SSL/TLS encryption.
- We manage payment information securely in compliance with PCI DSS standards.
- We enhance security by enforcing strict access controls on sensitive data.

3. Expected Bene fits

Customer Perspective

- You can experience a simple ordering and payment process.
- Receive real-time waiting and delivery information.
- Enjoy economic benefits through Aliv coin rewards.
- Experience personalized services through data analysis.

Store Perspective

- Increase sales through various order channels and promotions.
- Maximize operational efficiency through automated systems.
- Drive continuous improvements based on customer data.
- Maximize marketing effects through SNS and customer reviews.

III Technology and Vision

4. Reflecting shopping trends based on SNS

This system reflects the following SNS-based shopping trends..

- Growth and spread of social commerce
- Influence of influential SNS influencers
- Expansion of mobile shopping environments

5. Synergy of integrated System

This system provides the following synergy effects.

- Consistent user experience
- Efficient marketing and promotion execution
- Real-time operation management and data analysis

6. Technology and Market Outlook

This system has the following technical and market prospects.

- Utilization of artificial intelligence and big data
- Ensuring security and reliability through blockchain technology
- Enhancing automation functions through the integration of IoT (Internet of Things)

III Technology and Vision

7. Application Cases and Expected Benefits

This system has the following application cases and expected effects.

- Establishing an efficient order and payment management system
- Providing an improved customer experience
- Creating market expansion opportunities

8. conclusion

The new order and payment system using Aliv coin is a key element of digital transformation, expected to benefit both customers and stores. This system is anticipated to positively impact the future of the shopping and dining industries and contribute to the development of the industry through continuous innovation and improvement.

Expected to positively impact the shopping and dining industries, contributing to the overall development of the industry through continuous innovation and improvement.

ALIV Technology and Algorithm

IV ALIV Technology and Algorithm

1. Technology-Based

ALIV is implementing its coin system based on Litecoin open source. The main technical objectives of the ALIV project are fast transaction speeds and transactions with minimal or no intermediaries. It was determined that the Litecoin open source best aligns with these objectives, and thus it is being utilized.
While the development of proprietary blockchain technology is considered for the future, the current focus is on actively utilizing and improving the Litecoin open source.

1.1 What is Litecoin?

Litecoin (LTC), equipped with unique blockchain features, was created as a cryptocurrency that allows for fast, secure, and low-cost payments. It was built using the Bitcoin system but with modifications in hashing algorithms, hard caps, block transaction time frames, and several other aspects. One of the advantages of the Litecoin blockchain is that it takes only 2.5 minutes to process a transaction, making it ideal for micropayments or POS payments.

Litecoin is the second most widely used cryptocurrency after Bitcoin. Its popularity is primarily due to the ease of use and the clear advantages it offers. Speed and cost-efficiency are the main benefits of Litecoin. Litecoin transactions have no fees.

Litecoin is one of the few cryptocurrencies that can be traded for various fiat currencies. It can be purchased with US dollars (USD), South Korean won (KRW), euros (EUR), and other fiat currencies.

IV ALIV Technology and Algorithm

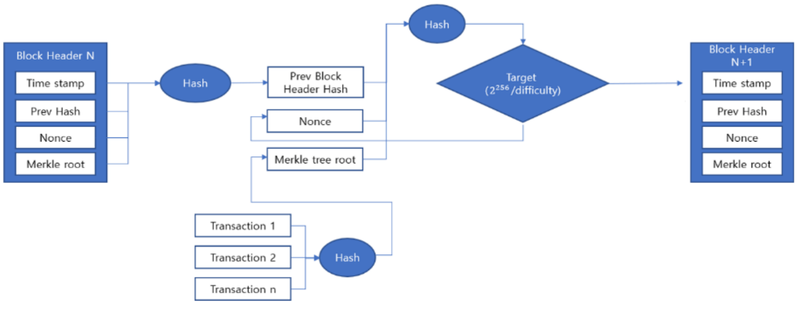
2. Technical information

A password-based key derivation function (PBKDF) is used in cryptography and security protocols to derive one or more secret keys from a secret value. Over the years, various methods have been used, including the original DES-based UNIX crypt function, FreeBSD MD5 crypt, Public Key Cryptography Standard #5 (PKCS #5) PBKDF2 [RFC2898] (commonly used PBKDF based on SHA-1), GNU SHA-256/512 crypt, Windows NT LAN Manager (NTLM) hash, and the Blowfish-based Scrypt. These algorithms are all based on cryptographic primitives combined with salting operations and/or iterations. The number of iterations is used to reduce the computation speed, and the salt is used to make precomputation costly. Password-based key derivation functions (PBKDFs) are generally designed to be computationally intensive, taking a relatively long time (e.g., hundreds of milliseconds). Legitimate users performing the function only once per task can ignore the required time. However, a brute force attack would need to perform billions of operations, making the time cost prohibitively high and effectively blocking the attack.

Previous PBKDFs, such as the well-known RSA Laboratories' PBKDF2, do not require sophisticated hardware or large memory resources because their resource demands are relatively low. Consequently, they can be easily and inexpensively implemented on hardware like ASICs or FPGAs. This enables attackers with sufficient resources to build hundreds or thousands of implementations of the algorithm on hardware and generate different subsets of the key space for each search, enabling large-scale parallel attacks. This reduces the time required to complete a brute force attack to a manageable range by dividing it by the number of implementations. All the above-mentioned PBKDFs share the same weakness against a powerful attacker. As computer systems become faster, if the number of iterations used increases, legitimate users can allocate a consistent amount of time to key derivation even as the attacker's computing power continues to grow.

2. Technical Information

In many contexts, parallelized hardware implementation may not change the number of operations performed compared to software implementation for legitimate users with the same software. This includes the embarrassing parallel task of performing brute-force searches on passphrases, which does not significantly change the asymptotic cost.



UDS($)/SEC is the most suitable unit for measuring calculation costs. As semiconductor technology advances, circuits do not become simpler, but they also become smaller, allowing for a greater amount of parallel processing at the same cost. Therefore, using existing key derivation algorithms may result in a decrease in the cost of finding a password using hardware-implemented brute-force attacks, even as the number of iterations increases and the time required for password verification remains constant. The scrypt function is designed to increase the resource requirements of the algorithm to hinder such brute-force attacks. In particular, this algorithm is designed to use a large amount of memory compared to other password-based KDFs, making hardware implementation larger and more expensive, limiting the amount of parallel resources attackers can use. Therefore, the purpose of the scrypt function is to reduce the advantage attackers can gain by using custom parallel circuits to decrypt password-based key derivation functions.

Therefore, scrypt is a password-based key derivation function created by Colin Percival for the Tarsnap online backup service, requiring large amounts of memory and specially designed to incur high costs for performing large-scale customized hardware attacks.

Sample sentence: I can't wait to see BTS perform live at the concert next week!

3. Algorithm

The algorithm contains the following parameters.

Passphrase - String to hash

Salt - a series of characters modifying hash to protect against rainbow table attacks.

N-CPU/memory cost parameter.p-parallelization parameter.p≤ (232-1) * a positive integer

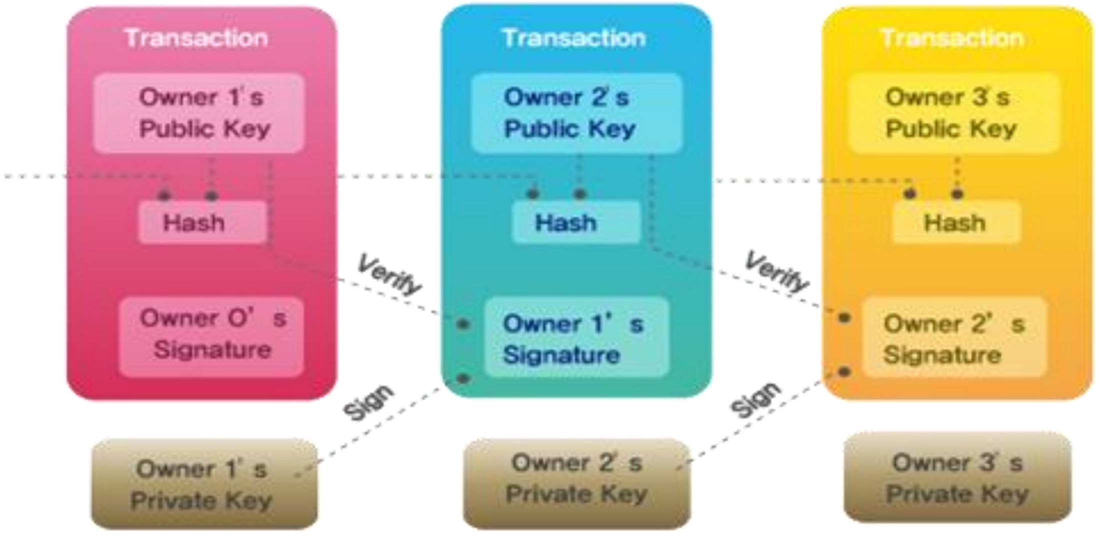
satisfying hLen/MFLen.dkLen-The intended output length in hexadecimal units of the derived key. dkLen ≤ (232-1)

* Positive integer satisfying hLen.r - Block size parameter for fine-tuning sequential memory read size and performance. In general, eight are used.

The octal length of the hLen-hash function (32 in the case of SHA256).The octal length of

the output of the MPlan-mixed function (below Smix) (below SMix) is SMix. It is defined

as r * 128 in RFC7914



Function scrypt

Inputs:

Passphrase: Bytes string of characters to be hashed

Salt: Bytes random salt

CostFactor (N): Integer CPU/memory cost paramete0072

BlockSizeFactor (r): Integer blocksize parameter (8 is commonly used)

ParallelizationFactor (p): Integer *Parallelization parameter. (1..$2^{32}-1$ * hLen/MFlen)*

DesiredKeyLen: Integer Desired key length in bytes

Output:

DerivedKey: Bytes array of bytes, DesiredKeyLen long

Step 1. Generate expensive salt

blockSize ← 128*BlockSizeFactor //Length (in bytes) of the SMix mixing function output (e.g. 128*8 = 1024 bytes)

Use PBKDF2 to generate initial 128*BlockSizeFactor*p bytes of data (e.g. 128*8*3 = 3072bytes)

Treat the result as an array of *p* elements, each entry being *blocksize* bytes (e.g. 3 elements, each 1024 bytes)

$[B_0...B_{p-1}]$ ← $PBKDF2_{HMAC-SHA256}$(*Passphrase*, *Salt*, 1, blockSize*ParallelizationFactor)

Mix each block in **B** $2^{CostFactor}$ times using **ROMix** function (each block can be mixed in parallel)

for i ← 0 **to** p-1 **do**

B_i ← ROMix(B_i, $2^{CostFactor}$)

All the elements of B is our new "expensive" salt

expensiveSalt ← $B_0 \| B_1 \| B_2 \| ... \| B_{p-1}$ *//where || is concatenation*

Step 2. Use PBKDF2 to generate the desired number of bytes, but using the expensive salt we just generated

return $PBKDF2_{HMAC-SHA256}$(Passphrase, expensiveSalt, 1, DesiredKeyLen);

Here, PBKDF2 (P, S, c, dkLen) notation is defined in RFC 2898 and c is the number of iterations.

This notation is used in RFC 7914 to specify the use of PBKDF2 with c = 1.**Function** ROMix(Block, Iterations)

```
  Create Iterations copies of X
  X ← Block
  for i ← 0 to Iterations−1 do
    V_i ← X
    X ← BlockMix(X)
  for i ← 0 to Iterations−1 do
    j ← Integerify(X) mod Iterations
    X ← BlockMix(X xor V_j)
  return X
```

Here, RFC 7914 defines Integrity (X) as the result of interpreting the last 64 bytes of X as Little Endian integer A1.

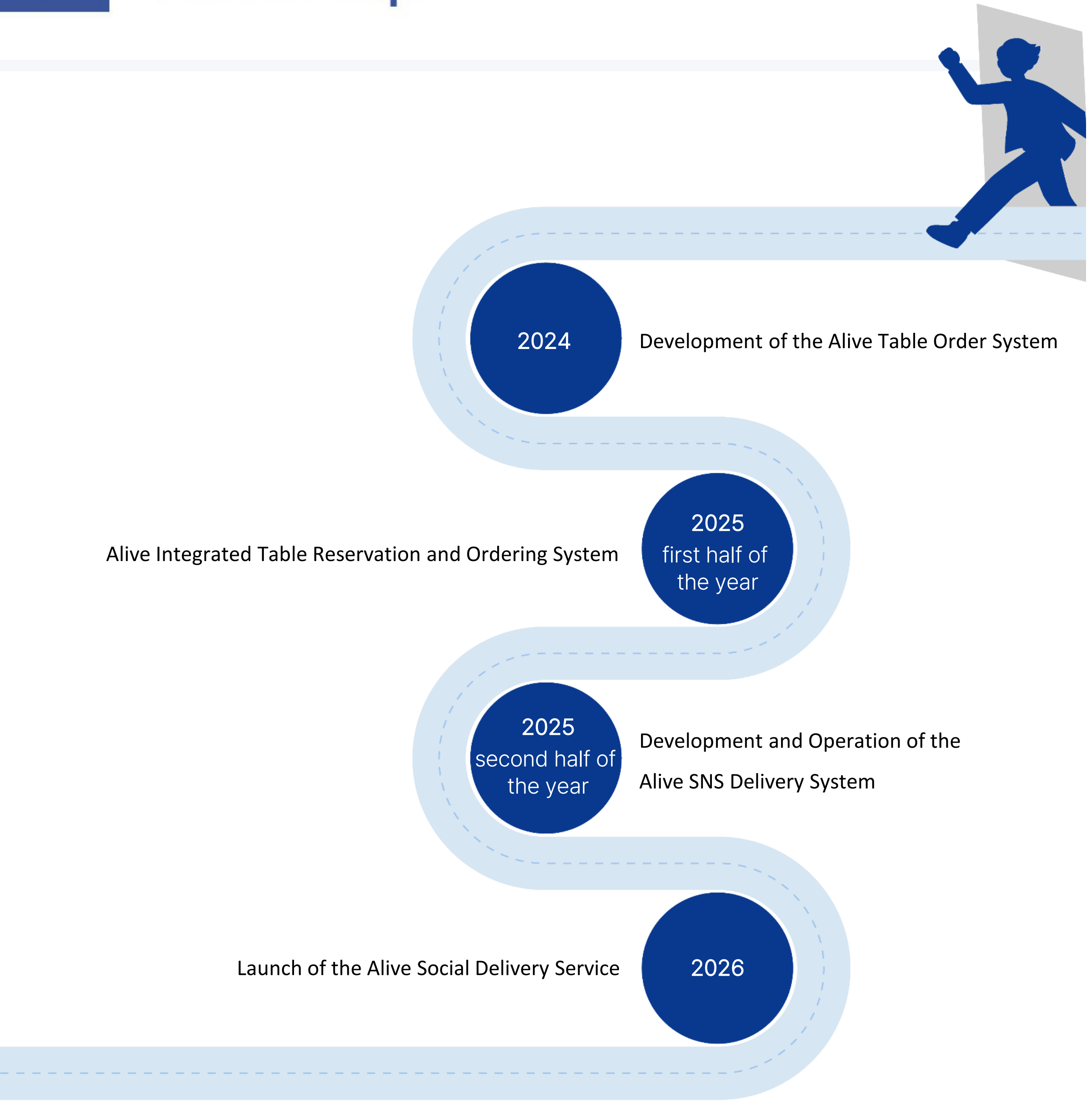
Since Iterations is the square number of N, we only need to calculate the first (N/8) byte of the last 64 bytes of X interpreted as the Little-Endian integer A2.Integerify(X) mod Iterations = A1 mod Iterations = A2 mod Iterations.

Function BlockMix(B):

```
   The block B is r 128-byte chunks (which is equivalent of 2r 64-byte chunks)
   r ← Length(B) / 128;
   Treat B as an array of 2r 64-byte chuncks
   [B_0...B_{2r-1}] ← B
   X ← B_{2r−1}
   for i ← 0 to 2r−1 do
      X ← Salsa20/8(X xor B_i)  //Salsa20/8 hashes from 64-bytes to 64-bytes
      Y_i ← X
   return ← Y_0 || Y_2 || ... || Y_{2r−2} || Y_1 || Y_3 || ... || Y_{2r−1}
```

Roadmap

V Roadmap



- Social delivery service

This is a transparent sharing system that combines the Olive delivery order system installed in each store with an SNS promotion system, allowing customers to place orders directly from reviews or promotional posts they have written. Review customers are supported to act as part of a promotional commission group.

Other Legal Disclaimers

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