



## INVITATION TO SUBSCRIBE FOR SHARES IN CRUNCHFISH AB (PUBL)

#### **REFERENCE TO PROSPECTUS**

This is a summary and introduction to the full prospectus prepared by the Board of Crunchfish AB, ("Crunchfish" or the "Company"). The brochure is neither an offer to invest in the Company nor a prospectus that has been approved and registered by the Financial Supervisory Authority. We kindly ask you to read the prospectus relating to the offer (the "Rights Issue" or the "Offer") to understand the potential risks associated with an investment in the Company before making any kind of investment decision. The prospectus is available on Crunchfish's website (www.crunchfish. com) and Västra Hamnen Corporate Finance AB's website (www.vhcorp.se).



# **Background and** reason

#### Background

Crunchfish is a deep tech company developing a Digital Cash platform for Banks, Payment Services and Central Bank Digital Currency (CBDC) implementations and Gesture Interaction technology for AR/VR and automotive industry. Crunchfish is listed on Nasdag First North since 2016, with headquarters in Malmö, Sweden and with a subsidiary in India.

Any public good in the society like the electricity, internet or telecom must be carefully designed to be resilient despite temporary outages. Digital payments are also a public good, but it is not as robust as it should be given its critical role in society. Crunchfish Digital Cash solves that by providing resilience through offline payments so that a payment can take place even if the parties lack internet connections or if the backend services are down. This is as important for private payment services as well as CBDC implementations.

Crunchfish signed its breakthrough order at the end of June for its patented Digital Cash solution with IDFC FIRST Bank in India. This has initially been implemented by IDFC FIRST Bank for CBDC in India and was showcased during Global Fintech Fest (GFF) in early September. It was key for Crunchfish to secure a banking partner in India as only the banking apps carries the digital rupee and it is only the banks that may post transactions on the UPI payment rail. Instant payments with UPI dominate the payment landscape in India and reached more than 10 billion transactions in August. National Payments Corporation of India (NPCI) launched UPI Lite X at GFF to facilitate offline payments. Crunchfish welcomes NPCI's focus on offline payments and believes Digital Cash complements UPI Lite X with a more secure and versatile offline payment solution for the Indian payment ecosystem. Outside of India, Crunchfish see great potential for Digital Cash in South-East Asia, Africa and Latin America and in countries with ongoing or planned CBDC implementations.

The most significant and disruptive happening within Gesture Interaction happened in June this year. Apple Vision Pro was announced, sparking a race towards new use cases, experiences, and fortunes. Companies worldwide are scaling up and positioning themselves to ride this wave to success. Crunchfish Gesture Interaction products have been ready for this for some time and now we gear up to meet these demands. Our products are proven in the market with many commercial agreements and implementations together with partners like Ximmerse, Lenovo and Oppo. Now is the chance for Crunchfish Gesture Interaction's growth to accelerate by starting to scale up and capture the new market opportunities. Our lean and efficient organization combined with our versatile product platform puts us in pole position to leverage these opportunities. We notice the excitement in the market after the Apple Vision Pro launch and Crunchfish is ready to deliver "the pinch" and many more gestures to customers and partners to create intuitive and immersive experiences.

#### **Reason and use of proceeds**

The Board makes the assessment that existing working capital is not sufficient to execute on the Company's business plan during the next twelve months. In order to meet the Company's working capital needs and to execute Crunchfish Digital Cash's market potential by accelerating ongoing integration projects, and thereby focus on building long-term shareholder value, the board has decided to carry out the Rights Issue.

Upon full subscription of the Rights Issue, the Company receives net proceeds of approximately SEK 75.2 million after deduction of issue costs of approximately SEK 10.2 million. The net proceeds will then be used to pay off the loan to Corespring Invest AB through set-off, for an amount of SEK 7.5 million, whereafter the remaining proceeds are intended to be used for the following purposes in order of priority:

- About 70 percent will be used for development, marketing and sales efforts.
- Digital Currencies.
- development and marketing and sales, mainly towards AR/VR and the Automotive segment.
- The remaining approximately 30 percent of the net proceeds will be used for working capital.



 About 50 percent of the net proceeds is distributed to Crunchfish Digital Cash, of which about 20 percent for further development of the Digital Cash solution and about 30 percent to marketing and sales, mainly in India and towards the market for Central Bank

About 20 percent of the net proceeds is distributed to Crunchfish Gesture Interaction evenly distributed between product

# **Crunchfish Digital** Cash AB

## Introduction

Payments were originally made offline only. What is today card payments began with restaurants accepting payment by registering the bill against a Diner's card. Cash issued by central banks is still offline by nature.

With the help of the internet, payments could be made more securely and also more efficiently. With the internet, a fundamental restructuring of digital payments to become online-based instead also began. Card payments today are based on the fact that the payer's ability to pay can be checked against an online bank account. New digital forms of payment have also emerged, made possible by that the legitimacy of a payment could be checked online. 15 years ago, Bitcoin came as a crypto-based system where a payment can be validated online through a consensus algorithm<sup>1</sup>. A few years later came realtime payments, which enable the immediate transfer of money between accounts. There are both real-time systems where debiting takes place directly against the payer's bank account and where debiting takes place against a new account managed by the payment system where the payer has transferred money in advance. Most central banks in the world are now investigating how cash can become digital and be handled online in what is called Central Bank Digital Currency (CBDC).<sup>2</sup>

However, becoming dependent on the internet for payment introduces vulnerability, and the Company therefore believes that today's payment services are not as robust as they should be. They are designed to work, when everything works. If the payer lacks internet access or if any backend server is overloaded or not in operation, the payment will fail. Crunchfish's view is that the world's central banks have realized this and that they believe that the possibility of offline payment is important when cash is digitized. Card payments can still be made offline by the recipient's bank allowing the merchant to accept payments up to a certain amount if the card terminal is offline. In India, the

central bank has opened up offline payments in the real-time systems by allowing payments of smaller amounts offline.<sup>3</sup>

Crunchfish Digital Cash offers today's online-based payment services the possibility of offline payment from mobile phones. This is done by integrating Crunchfish's solution, Digital Cash, by the payment service provider as a component of its payment app so that payment can work during these types of disruptions.

Crunchfish Digital Cash enables offline payment by signing offline payments from a secure environment to different types of recipients. The recipient can be a merchant, another mobile user, a card or wearable, for example a smart watch, or directly to the online ledger of the payment service provider. In the latter case, the offline payment is sent via the telecommunications network if internet is not available. In the other payment streams, the offline payment takes place with proximity-based transfer, via for example Bluetooth, when the payer and recipient are not connected to the internet.

Digital Cash offers a secure environment that is integrated into the payment app. From this secure environment, cryptographic keys, balances, transaction logs and transaction limits are managed, and offline payments are signed using a trusted PKI-based application protocol. It is the payment service provider's responsibility to settle the payment, i.e., move money between the payer's and the recipient's accounts when they are connected again. It is also the payment service provider that defines risk parameters and checks the security of the offline payments. According to the Company, the advantage of Crunchfish Digital Cash is that the solution offers a secure solution, where neither the data nor the execution can be manipulated, as well as scalability, by being a software solution rather than a hardware solution.

3 https://www.thehindubusinessline.com/money-and-banking/rbi-increases-upper-limitof-offline-payment-transaction-to-500-from-200/article67232009.ece



## Crunchfish Digital Cash enables offline payment by dividing the payment into three payment steps separated over time:

- 1) Reserve an amount for offline payment. Happens when the payer is online.
- has taken place. This can be done without either party having a connection.
- 3) Settle the payment by moving the paid amount to the recipient's account from the reservation. This happens when the payer or recipient is online again.

For offline payment to be secure, the integrity of the payer and the offline payment itself must be guaranteed. The payment service provider's backend is used to detect potential fraud as well as suspend and set transaction limits for each payer.

According to the Company, double spending, where the same digital value can be used multiple times, is offline payment's most important challenge to counter. It is equivalent to counterfeiting with physical cash. Crunchfish Digital Cash prevents double spending with a variety of security mechanisms, some of which are patent pending by Crunchfish.

#### **Digital Cash payment:**

#### **Digital Cash activities: Digital Cash security:**

## Reserve

Money is reserved in banks or central payment system when the payer is online.

Requires high security of the Digital Cash solution for reservations in the payers device.



Digital Cash is used by the payer to pay the payee offline.

the Digital Cash solution

Settle

The payment service provider

settles the offline payment

and defines risk parameters and checks security.

The payer or the payee initiate settlement that debits the payer's reserved amount and credits the payee's account. This happens when the payer or the payee is online.

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2) Pay offline with an amount that does not exceed the reservation. In this step, the payer and the recipient agree that payment

- a) Tamper resistant
- b) Logical lock (patent pending)
- c) Device fingerprinting
- d) Additional Factor Authorization
- e) Unauthorized use
- f) Risk parameters

- a) Transaction replay protection
- b) Payment authenticity
- c) Payment integrity
- d) Payment anonymity
- e) Payment encryption
- f) Quantum attack protection (patent pending)

- a) Reconciliation that prevents double spending online
- b) Reversal of Digital Cash to money
- c) Fraud resistance
- d) Certificate revocation
- e) Certificate expiration

<sup>1</sup> https://academy.binance.com/sv/articles/what-is-a-blockchain-consensus-algorithm 2 https://www.riksbank.se/sv/betalningar--kontanter/e-krona/digitala-centralbankspengar-internationellt/

# Crunchfish Gesture Interaction AB

## Introduction

Crunchfish develops AI technology that detects and track hands and body via one or more camera sensors. The technology can be used in many areas, but is optimized for AR/VR (Augmented and Virtual Reality) and the automotive industry.

Over the past 15 years, the world has moved from keypads and physical buttons to touch screens and interactive surfaces. Today, touch screens are standard for mobile phones and tablets, and the same applies to larger public screens at train stations, etc. Within the automotive industry, the number of screens in vehicles is increasing with both touch interaction and contactless interaction in the form of gestures. In AR/VR there are no physical screens at all, so how do you interact with devices without a physical screen? The purpose of Crunchfish Gesture Interaction is to enable users to intuitively interact with any screen. Regardless of whether the screen is physical or virtual, or whether the user acts in augmented reality or virtual reality - according to the Company, interaction must always work and be intuitive.

Within the automotive industry there is another, even higher purpose – to save lives. By enabling intuitive screen interaction with gestures, the driver can stay focused on driving. Furthermore, Crunchfish's hand and body detection technology can monitor driver and passenger behavior through a Driver Monitoring System, DMS, and an Occupant Monitoring System, OMS, and warn the driver if safety is compromised. This could be, for example, that the driver is drowsy or has attention on the mobile phone instead of on the road.

## **Crunchfish XR Skeleton**

Gesture control is about interacting with electronic devices without touching a screen or pressing physical buttons. Using a camera sensor and processor hardware, Crunchfish's gesture control technology makes it possible to interact remotely by detecting hand and body movements and then connecting those movements to various functions in the device.

The XR Skeleton product has a software architecture that creates a skeleton image with 21 points on each hand. Unique combinations of different methods have been used to train neural networks that enable the gesture control. The Company believes that the speed of development of new products by Crunchfish's development team both creates a wide range of new solution areas and demonstrates the technical flexibility of the Company's gesture control software.

The Crunchfish Skeleton platform – which is based on the XR Skeleton product – is the basis for the Company's continued development of existing and new products and has been supplemented during the year with additional functions and adaptations for new areas of use. The platform itself consists of several different components such as self-developed tools, camera rigs, self-designed neural networks and processes for generating synthetic data. XR Skeleton Stereo is the flagship of the Company's hand tracking products and enables detection and tracking with high precision in three dimensions because the product can handle camera configurations with dual camera sensors. The solution also makes it possible to measure the distance between the camera sensors and each of the 42 points (21 points on each hand) with high precision.

With the product XR Skeleton as a base, it is also possible to detect the entire body by initially applying 21 points and in the extension 34 points from head to toe and creating a full body solution - FB Skeleton.

By combining detection of both hands and body, the product Crunchfish PS Skeleton was developed. PS Skeleton can be used for interaction in vehicles, for interaction with smart TVs or public screens. This is because the software can keep track of the number of people in front of a screen, detect hands at lightning speed and provide information about body position and hand movements.

## Gesture Interaction market

According to the Company, the growing VR market is now established, while the market for augmented reality (AR) continues to grow more moderately. In June this year, Apple announced its new product Apple Vision Pro, which is a headset for digital (spatial) 3D experiences. This new product allows the user to fully enter the virtual world for maximum spatial experience or remain in augmented reality with full interaction with their surroundings. The company believes that a new standard for AR experiences is in the offing and sees this as a positive disruptive event for Crunchfish.



One event that Crunchfish expects will drive the use of AR glasses is Apple's launch in June of the Apple Vision Pro, which will hit the market in early 2024. With this launch, the starting point for a new standard has passed and Crunchfish is already seeing increased activity of customers and partners supplying the Android segment. In the same way that Apple made biometrics user-friendly, both with fingerprint recognition and facial recognition, the Company's expectation is that their focus on user-friendliness will also lead to good AR experiences and thus significantly increase the use and demand for this type of product. In addition to Apple Vision Pro, Apple has also included gesture control in the Apple Watch, which shows that gesture control is on the rise.

# Terms for the Offering

Terms	Anyone who on the record date of October 16, 2023 is a shareholder in Crunchfish has preferential rights to subscribe for shares in the Rights Issue in relation to previous holdings, whereby one (1) existing share gives one (1) subscription right. Three (3) sub- scription rights entitle the holder to subscribe for one (1) new share in the Company.
Subscription price	SEK 7.75 SEK per share.
Size	SEK 85.4 million.
Number of shares in the Offer	11,013,055 shares.
Record day	October 16, 2023.
Subscription period	October 18 - November 1, 2023.
Trading in subscription rights	October 18 - October 27, 2023.
Trading in paid subscribed shares ("BTA")	October 18 2023 funtil conversion to shares takes place after the Rights Issue has been registered with the Swedish Companies Registration Office (Sw. Bolagsverket).
Publication of outcome	Around November 3, 2023.
Subscription commitments and guarantee commitments	The Rights Issue is covered by subscription commitments and guarantee commitments totaling approximately SEK 51.2 million, corresponding to 60 percent of the issue.



**Important information:** subscription and payment for the new shares should take place in good time before 1 November 2023, as different trustees have different processing times. Subscription rights not exercised by November 1 or sold by October 27, 2023 will expire without value.

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