

# INTERIM REPORT 033 2023

# Scalable software solutions

As a deep tech company Crunchfish develops software solutions for market needs that we believe will grow significantly in the future. Major revenues are yet to come, but there are many signs that Crunchfish has made scalable technology choices for the two areas we invest in – Digital Cash and Gesture Interaction.

### **Digital Cash**

Smartphones and smartcards are the dominating form factors for payments today and offline payments will not change that. Crunchfish Digital Cash complements payment apps in smartphones with the required security for offline payments and it is deployed together with the app to any smartphones via app stores. Alternative offline payment security for smartphones that rely on hardware-based solutions are much harder to implement as they require partnering with multiple device manufacturers or mobile operators to deploy it on mobile devices in the market. In practice, this makes Crunchfish Digital Cash arguably the only viable offline payment solution for smartphones as it is both secure and scalable.

Crunchfish Digital Cash is versatile, security tested and has been piloted in India. Crunchfish has a head start of many years on anyone wanting to make a similar solution. In addition, Crunchfish has a patent portfolio with several innovations for offline payments that protects key aspects of the solution. The original Digital Cash patent from early 2020 protects that both parties register the offline transaction and can independently of each other initiate settlement at a later stage. Crunchfish has also patented an interoperable system where the payee initiates settlement by sending the same offline payment as received from the payer. A third key patent is protecting an exchange of value between a smartphone and a smartcard in offline mode. In addition to these three innovations with positive international reports on patentability there are also eight patent pending innovations that protects the solution.

As the use of digital payments continues to grow there is an increasing need to implement offline payments to make the payment services resilient, improve financial inclusion and to load balance the backend. The more critical a payment service is for a country, the higher the need for offline payments. With exponential growth of instant UPI payments, India has reached the threshold where offline payments have become of a great importance for society. Another main driver for offline payments is the central banks plans to complement cash by issuing digital currencies.

Crunchfish entered the quarter by signing our first commercial Digital Cash agreement with IDFC FIRST Bank in India. As a first implementation they decided to integrate Digital Cash telecom in their Digital Rupee app and it is now awaiting approval from the Reserve Bank of India (RBI) before release. This is a milestone, but the expected scale up has been delayed, at least in the short term, through the launch of UPI Lite X by National Payment Cooperation of India (NPCI). UPI Lite X adds offline payments to UPI and the Indian payment eco-system. A Non-Disclosure Agreement has been entered with NPCI to discuss how Digital Cash offline may complement NPCI products. This is exciting and an indication of Crunchfish Digital Cash unique strengths.



### **Gesture Interaction**

Gesture control is about interacting with electronic devices without touching a screen or pressing physical buttons. 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 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 scalable software platform.

Crunchfish Gesture Interaction announced the release of version 2.4 of XR Skeleton in Q4. It is the most accurate and performant version to date. Improvements particularly notable are reduced finger jitter and increased stability, making the user experience much more reliable and natural. This is a common challenge in hand-tracking and a divider of leading hand-tracking companies from others. As one of few independent hand-tracking providers this brings Crunchfish Gesture Interaction to the forefront.

### Financing

In Q4 Crunchfish secured financing through a rights issue of SEK 51.2 million, before issue-related costs of approximately SEK 8.2 million and a netting a loan of SEK 7.5 million, providing an additional net funding to the company of SEK 35.5 million. We had during the year expectations of closing a directed issue but when it had not materialized after Q3, a rights issue became the best option.

The dilution became 16,7% as the number of shares in the company increased with 6.6 million from 33 million to 39.6 million shares. As the share price was trading below the subscription price during the subscription period, the rights issue was subscribed to only 60% with guarantors subscribing to 5 million shares. Despite funding at only 60% it supports the company's operations well throughout 2024 and affords the company time to evaluate strategic options.



### **Crunchfish group**

### 2023-11-02

The board of directors of Crunchfish announced the outcome of the rights issue that was announced on September 20th, 2023.

### 2023-10-16

Crunchfish prepared an EU Growth Prospectus regarding the rights issue of units announced on September 20th, 2023. The Prospectus was approved and registered by the Swedish Financial Supervisory Authority.

#### 2023-09-20

Crunchfish resolved to carry out a new issue of shares with preferential rights for existing shareholders of approximately SEK 85 million before issue costs.

### **Digital Cash**

### 2023-11-17

Crunchfish and IDFC First Bank discussed offline payments in FNA's CBDC Broadcast – The next frontier of payments.

### 2023-11-16

Lipis Advisors in partnership with Crunchfish released the sixth and final white paper in the series "Enabling offline payments in an online world" with the title "Ensuring trust in scalable offline solutions ".

#### 2023-10-30

Crunchfish completed an integration of Digital Cash with the Mojaloop payment platform. Financial service providers will now be able to offer its users the ability to perform payments with Mojaloop even when offline.

#### 2023-10-24

Crunchfish Group CEO Joachim Samuelsson presented Crunchfish's pioneering Digital Cash solution at Aktieportföljen Live. The focus was on Crunchfish's unique ability to deliver secure and scalable offline payments for digital wallets and CBDC implementations in India and other parts of the world.

### 2023-10-12

Crunchfish in collaboration with IDFC FIRST Bank were announced runner-up for its Digital Cash telecom solution, in Reserve Bank of India's second global hackathon HaRBInger 2023 on the theme "Inclusive Digital Services".

#### 2023-09-05

Crunchfish inked a partnership with LISNR, the global leader in proximity verification using data-over-sound, to give merchants and banks a turn-key proximity-based payment solution.

#### 2023-09-05

Crunchfish attended the Global Fintech Fest in Mumbai, the largest fintech event in India, as official Offline Payments Partner.

#### 2023-09-01

Offline payment scalability was the topic of the webinar in the series Enabling offline payments in an online world to discuss the 5th white paper – A practical guide for offline payment scalability, that Lipis Advisors released in partnership with Crunchfish. A panel discussion with participation from Ripple, Lipis Advisors and Crunchfish followed the presentation of the white paper.

#### 2023-07-07

Crunchfish released Digital Cash 2.2 enabling consecutive offline payments, in which the payer and payee exchange a transaction offline, and the payee can immediately spend the received funds in another offline transaction without going online. This feature may be the most desirable approach for CBDC given its resemblance to the properties of cash.

### **Gesture Interaction**

#### 2023-10-27

Crunchfish announced the release of version 2.4 of XR Skeleton SDK. The latest version based on the XR Skeleton Platform is packed with improvements to help customers and partners create successful XR experiences.

### 2023-09-27

During the Moverio Developer Conference in Barcelona, Crunchfish announced that the company has created a subscription-based software offering to the Epson Moverio app developer community.

## Digital Cash



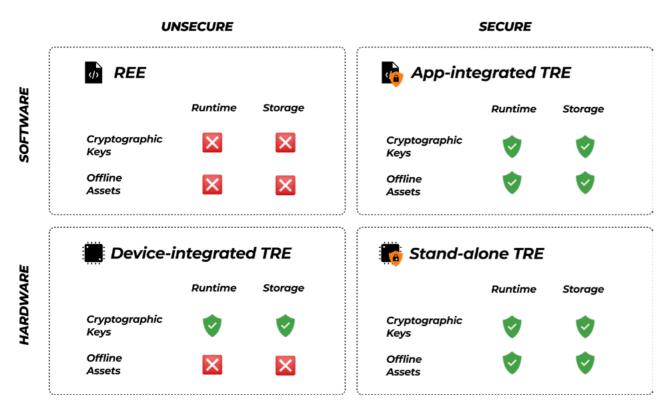


## The scalable offline smartphone solution

To support offline payments the payment app security must be increased as it cannot rely on the security in the backend when making offline payments. Crunchfish Digital Cash integrates this higher level of security directly within the payment app, making it uniquely scalable, since it can be deployed together with the payment app on all smartphones.

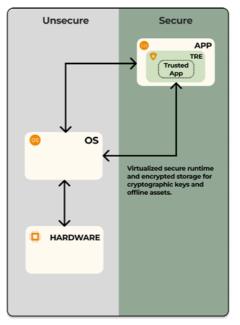
Offline payments require a much higher security than what is offered by the unsecure Rich Execution Environment (REE) on a smartphone. This higher level of security may be achieved by implementing offline payments as a Trusted Application (TA) protected by a Tamper Resistant Element (TRE) that provides a secure runtime and storage for cryptographic keys and other offline assets, such as the offline balance and risk rules. The required security can be provided either as an app-integrated TRE or as a standalone TRE.

Crunchfish Digital Cash provides the required security for offline payments by a virtualized secure runtime and encrypted storage for cryptographic keys and offline assets. It is implemented as a TA in an app-integrated TRE, also known as virtual Secure Element (SE). Attackers cannot tamper with the Digital Cash TA or bypass the protection mechanisms without first breaking the virtual SE itself. This makes Crunchfish Digital Cash a very secure solution for offline payments.



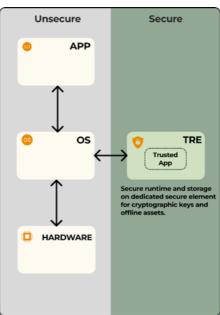
An overview of hardware- and software-based implementation environments for offline payments. A secure runtime and storage must be provided for both cryptographic keys and offline assets.

### App-integrated TRE



An app-integrated TRE provides a secure environment for offline payments. It provides isolation by a virtualized secure runtime and encrypted storage for cryptographic keys and offline assets. It is highly scalable, as the offline payment TA is deployed and updated with the payment app on all smartphones using app stores.

Standalone TRE



A standalone hardware-based TRE provides an isolated secure runtime and storage for cryptographic keys and offline assets that is secure for offline payments. Whereas offline payments on smartcards are available, it is hard to deploy offline payments on standalone TREs on mobile devices in practice due to device fragmentation and limited mobile OS support.

### Trust gap

A common belief is that hardware-based SEs are always more secure than software-based virtual SEs because of the clarity of security boundaries. However, due to the inevitable separation between the payment app and the hardware-based TRE, there is always a trust gap between the two communicating endpoints. As the isolated TRE does not have full visibility of the payment app and the mobile OS, it cannot determine the identity of the app and must "blindly" trust the mobile-OS and the payment app.

By contrast, there is no trust gap with Crunchfish Digital Cash as it runs within an app-integrated TRE and offers a consistent high level of security, independent of the smartphone and mobile-OS. Another key benefit is that Digital Cash runs securely on jailbroken or rooted devices as a compromised device does not affect the running of Digital Cash within the virtual SE.

### Uniquely scalable

Scalability for payment apps that rely on standalone TREs is a challenging due to device fragmentation. To achieve widespread market availability, there is a need for the payment application provider to partner with multiple device manufacturers or mobile operators to provision the standalone TRE on smartphones. There are also the additional hardware cost and challenges in manufacturing and distributing the hardware based standalone TREs. This makes offline payments much harder to deploy and scale for payment applications using standalone TREs.

By contrast, a key differentiator for Crunchfish Digital Cash is its ability to deliver scalability. This comes from being integrated with the payment app and therefore can be deployed on any smartphone using app stores. Arguably, Crunchfish Digital Cash is the only viable offline payment solution for payment apps on smartphones in the market as it is the only one that is both secure and scalable.

## IDFC app ready for launch in India

Crunchfish Digital Cash is soon to be available in the first ever commercial app, together with IDFC FIRST Bank in their Digital Rupee app. The same solution has been awarded by Reserve Bank of India (RBI) in their global hackathon HaRBInger 2023.



Crunchfish and IDFC FIRST Bank entered into a commercial **license agreement** at the end of Q2 2023. IDFC FIRST Bank has licensed both Digital Cash offline, for complete offline transactions, as well as Digital Cash telecom, which enables payments over telecom networks if the payer lacks data connection. Crunchfish and IDFC FIRST Bank have been working closely together on the integration of Digital Cash into IDFC FIRST Bank's payment applications. The first commercial deployment will be with Digital Cash telecom integrated into the IDFC FIRST Bank Digital Rupee app. The Digital Cash functionality will be made available as an appupgrade through Google Play and Apple App Store. The app is in final review by Reserve Bank of India (RBI) and expected to be available for download during Q4.

The joint IDFC FIRST Bank and Crunchfish Digital Cash solution has already been recognized by RBI in their global hackathon HaRBInger 2023. Crunchfish and IDFC FIRST Bank were invited as one of 28 finalists to present and demonstrate their submitted solutions for an expert jury at the Grand Finale in Bengaluru on October 10th-11th. Based on the submitted innovation and the presentation, Crunchfish and IDFC First Bank were awarded runner-up in the problem statement category "New use cases for CBDC-Retail including offline transactions" and awarded a cash prize of INR 2,000,000.



Sunil Karkera, Senior Product Manager, Payments and Fintech Partnership at IDFC FIRST Bank. Nayan Mehta Product Manager, Payments and Fintech Partnership at IDFC FIRST Bank. Gagan Kochar, Head of Business Development India at Crunchfish.

Crunchfish was the official Offline Payments Partner at the Global Fintech Fest 2023 (GFF) September 5-7 in Mumbai, India. GFF is the largest fintech conference in India, with +50,000 visitors and +500 exhibitors from over 125 countries. Crunchfish exhibited Digital Cash solutions in the exhibition area with live demos and presentations. Crunchfish's joint solution with IDFC First Bank was also showcased. As the official Offline Payments Partner, CEO Joachim Samuelsson hosted and moderated a panel discussion on the topic: "The impact of offline payments in a digital world: Robustness, Privacy and Inclusion". The panel included senior payment experts Lalitha Natarajan, Head of Digital Partnerships, D2C business and Payments at IDFC FIRST Bank, Neha Gupta, Director at Amazon Pay, Mehul Mistry, Global Head of Strategy, Digital Financial Services, Marketing & Partnerships at Wibmo and Prasanna Lohar, President at India Blockchain Forum.



United Payments Interface (UPI) is India's real-time mobile payments platform, developed by the National Payments Corporation of India (NPCI) and regulated by the Reserve Bank of India (RBI). UPI enables transactions between banks through mobile payment applications. It connects different bank accounts through a common platform, making it possible to transfer money in real time. During October 2023, UPI had 505 banks connected and completed 11.4 billion transactions\*. During GFF NPCI launched UPI Lite X to enable offline payments for UPI. Crunchfish welcomes NPCI's focus on offline payments and believes that Digital Cash complements UPI Lite X with a more secure and more versatile offline payment solution for the Indian payment ecosystem. Like Crunchfish Digital Cash, UPI Lite X is based on the fact that the payer and the recipient can trust each other and the offline payment, in a similar way that a card terminal can trust a card and a transaction. Crunchfish Digital Cash has applied for a patent for the solution and received positive international reports on patentability that protects how each party can forward the offline payment to the payment system's backend in a secure manner to increases the reliability of the payment system. UPI Lite X uses the same approach and Crunchfish has notified NPCI's about this, even though Crunchfish has no granted patents yet in India as they are pending examination. An NDA has been entered between NPCI and Crunchfish to discuss how Digital Cash can complement and improve UPI Lite X and also how NPCI can utilize a future Crunchfish patent. A collaboration that means that UPI Lite becomes compatible with Digital Cash would significantly increase Crunchfish's market potential in India.

The relation with HDFC Bank is still ongoing. HDFC Bank is yet to decide whether to implement offline functionality in its payment applications with Digital Cash telecom as well as Digital Cash offline and/or UPI Lite X.

\*https://www.npci.org.in/what-we-do/upi/productstatistics

## **CBDC focus in Outdia**

Outside of India Crunchfish's focus is on the CBDC market. Crunchfish mainly works through partners in the CBDC eco-system but also have direct relations with central banks to position offline payments. An important activity has been the whitepaper and webinar series Enabling offline payments in an online world. The six episodes in the series host topics that are very relevant for decision makers within the CBDC community.



Money is either physical or digital. The central bank is the issuer of physical money in the form of notes and coins. Digital money is held in bank accounts and constitutes a claim on the bank rather than the central bank. A new digital format is cryptocurrency, which is neither guaranteed by central banks nor commercial banks, but its authenticity is demonstrated by a blockchain of transactions. A driving reason why central banks want to digitize the cash - CBDC - is the danger that international cryptocurrencies could undermine the country's currency and the possibilities for the country to conduct monetary policy. When the cash is to be digitized the central banks must strive to offer the physical cash's unique properties as means of payment in digital form. They must work offline and be able to be approved

immediately as payment completely independent of network connection. At the same time citizens must continue to be able to be private with their payments within reasonable limits. The banks do not need to see all transactions just because they are digital. Digital Cash must also be flexible, scalable and interoperable with today's payment solutions. Crunchfish's patented Digital Cash platform solves all this.

A majority of the world's central banks are evaluating or preparing to roll out CBDC. Support for offline payments is on the agenda for most of these projects. Crunchfish has positioned Digital Cash against central banks and the surrounding ecosystem of providers by attending and presenting at CBDC conferences around the world and hosting the white paper and webinar series "Enabling offline payments in an online world", where six different topics have been covered. These topics are highly relevant to decision makers for CBDC implementations, with the goal of describing the need for offline payments and providing an overview of the various design considerations that payment operators, such as central banks, need to make.



Crunchfish's go-to-market strategy for the CBDC market is to partner with CBDC platform vendors and other relevant players in the CBDC eco-system. The platform vendors integrate Digital Cash into their solution to be able to offer offline payment to central banks. One of the partners that signed an evaluation agreement in Q2 is expected to complete integration during Q4. Driver for this integration is a pilot project with a central bank where offline payment is part of the requirement specification.

An integration with the Mojaloop payment platform has been completed. Mojaloop Foundation is a charitable nonprofit and maintains its free, open-source software Mojaloop and the surrounding community as a public goods in service of financial inclusion. Mojaloop serves as a reference model for creating interoperable payments platforms connecting all digital financial providers and customers, especially the financially excluded. With an initial focus in Africa, the foundation is expanding its engagement where there is opportunity to directly affect financial inclusion through interoperable payments, looking to address the critical challenges faced by underserved communities. By adding offline payment capabilities through Digital Cash, these underserved communities will no longer be dependent on telecom and internet infrastructure to be able to perform mobile payments, which further strengthens Mojaloop Foundation's mission to increase financial inclusion. Crunchfish will work together with the Mojaloop Foundation to engage with digital financial service providers, regulators, non-governmental organizations and governmental offices, including CBDC initiatives.

# mojaloop

As mentioned above, IDFC FIRST Bank is an important partner for Crunchfish to address the Digital Rupee, India's CBDC initiative. Currently only banking apps are allowed to carry the Digital Rupee which makes the partnership key to position Digital Cash.



## Gesture Interaction



crunchfish

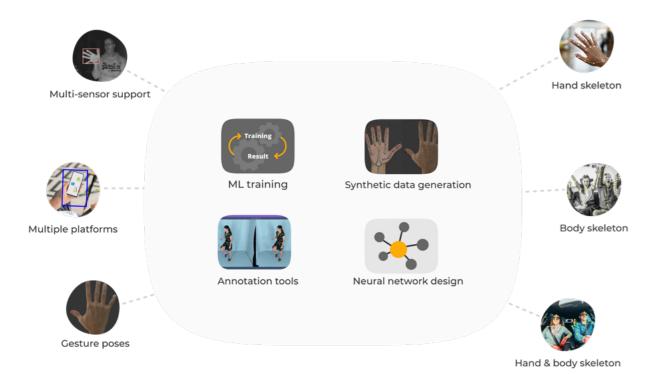
## DEEPI INTUIN (E GESTUR )

Touchless interaction enables users to interact with devices without touching displays or physical buttons.



## The scalable XR Skeleton Platform

In 2022 XR Skeleton SDK was released based on the XR Skeleton Platform, our technological crown jewel. The platform is the result of decades worth of software engineering efforts within computer vision, machine learning and tooling. It is the foundation to our scalability.



At Crunchfish Gesture Interaction, key principles are to do things right and do it well. With a scientific approach a versatile platform is built that makes it easy and straightforward to tackle any computer vision challenge within the gesture domain. The problem could be to support a new camera type or a different use case like virtual try-on for watches or a new customer specific gesture. Regardless, with the XR Skeleton Platform it's easy to make a solution for it and it is a critical component for a small company to be able to scale in a competitive market. The model when working with the XR Skeleton Platform is to begin with reviewing the use case, collect real data, annotate the data set using our in-house developed annotation tools and expand it using synthetic data generation that provides great variation possibilities. Then choose the neural network most suitable for the problem and start machine learning training. Finally do the rewarding part in testing and validating the performance. Often parts of the process are repeated and tuned to reach the best performance. The goal is always to deliver top notch results with the end user in mind. This model has been the foundation of expanding the product offering at the lowest effort possible to be quick and able to deliver solutions at a competitive price. Based on the XR Skeleton Platform, Crunchfish Gesture Interaction has been able to deliver several SDKs for customers and partners. The engineering team continuously develops the platform and products and will continue to add new SDKs to support new use cases and to serve our customers.

### **XR Skeleton Mono**

SDK for single camera use cases

### **XR Skeleton Web**

SDK for web applications like virtual try-on

Crunchfish Gesture Interaction announced the release of version 2.4 of XR Skeleton in Q4. It is the most accurate and performant version to date. Improvements particularly notable are reduced finger jitter and increased stability, making the user experience much more reliable and natural. This is a common challenge in hand-tracking and a divider of leading hand-tracking companies from others. As one of few independent hand-tracking providers this brings Crunchfish Gesture Interaction to the forefront.

### **XR Skeleton Stereo**

SDK for two camera use cases and with camera overlap real hand size

### **XR Skeleton for Moverio**

SDK for Epson Moverio and offered to Moverio app developers as Software as a Service

## Market update

As anticipated, the Apple Vision Pro announcement is creating ripples on the water in the market as large VR brands make follow up announcements moving away from controllers and closer to hand-tracking and gesture interaction. Crunchfish Gesture Interaction notices the activity but the commercial benefits for the company is yet to come.



Meta's latest SDK v56 includes their latest hand-tracking Hands 2.2 for the Meta Quest Pro headset. The new SDK enables users and developers to simultaneously use handtracking and hand controllers, a functionality they call



multimodal. Meta also released the new Meta Quest 3 headset, leading the way on the VR headset market.

Another exciting ripple on the water was the hand-tracking focused announcement made by PICO, owned by ByteDance (owner of TikTok). In PICO OS 5.7.0 the tech giant hints to the fact that controllers may not be used at all in the future. Today controllers are a given interaction method for gamers but the industry is realizing that widespread adoption won't be through the somewhat niche gaming community. PICO is said to even encourage game developers to first and foremost develop game experiences based on hand interaction only over controllers. Good news from both a cost perspective and environment with fewer components. Looking at the ongoing projects with our customers the trend is mixed. The Daystar AR glasses from Lenovo with our hand tracking are generating modest volumes. The device is only for the domestic Chinese market and so far hasn't made any major breakthroughs. With a growing AR market chances are that volumes increase in 2024.

On a positive note we see a doubling in volume quarter to quarter from our partner Ximmerse but from low numbers. Still, the trend is promising and the Rhino X and Rhino X Pro devices have good potential both in the domestic Chinese market but also internationally. Ximmerse has during the quarter started to promote their new product Rhino X 2.0. Expectation is that volumes will continue to grow at a percentually high pace in the coming quarters.

From the US our partner Logistiview continues to roll out their logistics solution to a large retail customer and we see the number of active users per month increasing. This is a positive development to see another account grow from



low volumes. With this first reference customer in place Logistiview may be able to win other retail customers and rapidly increase the user base.

In Europe we participated in the Epson developer conference and released XR Skeleton for Moverio as a subscription based model. The ecosystem is mainly focused on remote assistance and it is likely to take time for the community to widely adopt hand-tracking and gestures.

All in all, as the market grows and the number of partners increase their volumes and customer base along with Crunchfish Gesture Interaction adding more partners, we believe our revenue can increase significantly. The product offering is very scalable and capable of adding more customers and projects at low or no extra cost to the company. There are many ongoing conversations and evaluations but many companies delay actual investments into 2024 due to macroeconomic factors.

## **Collaboration with Lund University**

Crunchfish Gesture Interaction has always promoted University collaboration and since September 2023 there has been an ongoing exchange between Crunchfish Gesture Interaction and Faculty of Engineering LTH at Lund University. A perfect way to give students a chance to explore and learn about what's ahead after graduation.

At the Faculty of Engineering LTH at Lund University the Virtual Reality and Augmented Reality program is led by Dr. Günter Alce. During the third semester the course Augmented Reality - Interaction aims at giving in-depth knowledge about AR interaction and the course allows students to collaborate with corporations such as Crunchfish Gesture Interaction. Two projects were pitched to the students and both got teams signed up.

One project is to explore how well the hand-tracking SDK works on small gestures in the form of creating a virtual

keyboard. The second project is to create a combination of hand-tracking and eye-tracking to learn how well these technologies play together and to do a user interaction case study to learn about user experience. The projects are to be completed by mid December 2023.

After the course is completed and based on the findings the work may continue or spin off into master thesis projects. The ability to do research and development in collaboration with the university is another way to maintain scalability in any organization, especially in a small company.



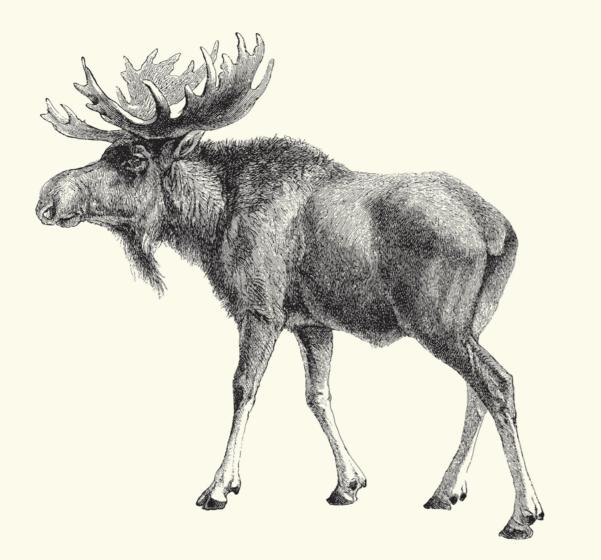
"I believe it is crucial to provide students with authentic projects from actual companies, as this not only boosts their motivation but also offers a glimpse into the future. I am thrilled that the collaboration with Crunchfish Gesture Interaction helps our students in both aspects", **says Günter Alce, Ph.D. at Faculty of Engineering LTH at Lund University.** 

"This type of collaboration is really close at heart to me. I find it very rewarding for any organization to work with students for many reasons. You get students to help out with areas of interest that are hard to prioritize internally, you add new ideas and fresh input both to confirm and challenge old truths and most of all you get to befriend some new people. I wish we could do this even more", **says Fredrik Clementson, CEO Crunchfish Gesture Interaction.** 





## Financials



### **Financial report**

### Sales and earnings for the quarter

Net sales amounted to SEK 189 (5,806) thousand for the third quarter and operating expenses amounted to SEK 11,747 (10,401) thousand. EBITDA for the period amounted to SEK -5,717 (639) thousand. Loss before tax for the third quarter amounted to SEK -6,916 (-900) thousand and has been charged with amortization of intangible assets of SEK 1,166 (1,580) thousand and tangible fixed assets of SEK 72 (55) thousand.

The decrease in net sales is due to the commercial agreement with OPPO Mobile Telecommunications entered in the fall of 2022. The agreement was valid retroactively from December 2021 to December 2023, with an upfront fee of US\$ 500,000 including a commercial license and technical support. The upfront fee regarding the commercial license was recognized as revenue in Q3 2022 as the software were delivered to the customer before the end of the quarter and the company had no future commitment.

In June 2023 a commercial 3-year agreement was entered with IDFC First Bank in India. The agreement consists of a 2-year license that is recognized as revenue on an ongoing basis during the two years. The license fee includes an upfront fee covering the first batch of users, as well as support and mantainence on the Digital Cash SDK. Additional user fees will be added as the Digital Cash functionality is rolled out to the IDFC First Bank user base.

## Sales and earnings for the first nine months of the year

Net sales amounted to SEK 654 (6,156) thousand for the period and operating expenses amounted to SEK 37,125 (32,321) thousand. EBITDA for the period amounted to SEK -19,069 (-9,832) thousand. Loss before tax for the period amounted to SEK -22,384 (-14,382) thousand and has been charged with amortization of intangible assets of SEK 3,364 (4,582) thousand and tangible fixed assets of SEK 188 (166) thousand.

### Investments

During Q3, the Group invested SEK 4,047 (3,133) thousand in intangible fixed assets and 641 (0) in tangible fixed assets.

During the first nine months of the year, the Group invested

SEK 12,315 (9,996) thousand in intangible fixed assets and SEK 1,233 (60) thousand in tangible fixed assets. The investments in tangible fixed assets refer to two new financial leasing agreements regarding two passenger cars.

### Liquidity and financing

At the end of the third quarter the Group's cash and cash equivalents amounted to SEK 4,770 (10,833) thousand. Cash flow from operating activities during the third quarter amounted to SEK -7,782 (-5,360) thousand.

In Q4 Crunchfish secured financing through a rights issue of SEK 51.2 million, before issue-related cost of approximately SEK 8.2 million and netting a loan of SEK 7.5 million, providing an additional net funding to the company of SEK 35.5 million.

### Staff

As of September 30, 2023, the number of employees was 23 (21).

### **Risks and uncertainties**

A number of different risk factors could impact Crunchfish's operations and industry negatively. It is therefore very important to consider relevant risks in addition to the Company's growth opportunities. Relevant risks are presented in the prospectus issued by Crunchfish AB in October 2023 and the annual report for FY 2022, which can be found at crunchfish.com.

### **Related party transactions**

Company management and administrative staff are employed in the parent company Crunchfish AB. Reported sales in the parent company consists of income from services rendered for management and administration of the company's two subsidiaries.

In August 2023, Crunchfish AB entered into a financing agreement worth SEK 7.5 million with the Company's second shareholder, Corespring Invest AB, represented by the Chairman of the Company's Board, Göran Linder. The financing consists of a loan of SEK 7.5 million that is due for repayment on February 9, 2024. The interest rate amounts to 7% per year. The third quarter of 2022 has been charged with expenses regarding interest of SEK 73 thousand.

## Sales and earnings for the quarter, parent company

The parent company's net sales amounted to SEK 3,877 (3,864) thousand for the third quarter and operating expenses to amounted to SEK -4,146 (-4,414) thousand. EBITDA for the period amounted to SEK 288 (-78) thousand. During the third quarter, the parent company invested SEK 0 (0) thousand in intangible fixed assets and SEK 0 (0) thousand in tangible fixed assets.

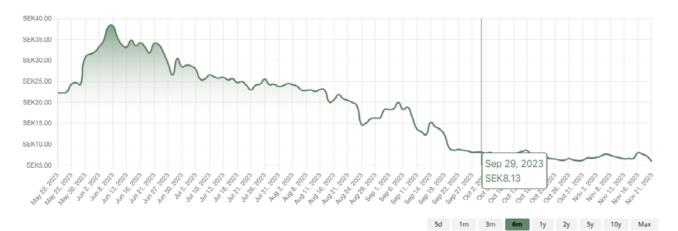
## Sales and earnings for the first nine months of the year, parent company

The parent company's net sales amounted to SEK 12,988 (13,172) thousand for the period and operating expenses to amounted to SEK -14,044 (-14,606) thousand. EBITDA for the period amounted to SEK 453 (143) thousand. During the period, the parent company invested SEK 0 (0) thousand in intangible fixed assets and SEK 0 (60) thousand in tangible fixed assets.

### Major shareholders for Crunchfish AB (publ) as of September 30th 2023

Shareholder	number of shares	% of shares
Femari Invest AB (CEO Joachim Samuelsson & Petra Samuelsson)	7 500 000	22,70%
Corespring Invest AB (Chairmain Göran Linder)	5 985 441	18,12%
Paul Cronholm (Founder & CTO)	1 101 601	3,33%
Carlquist Holding AB	1 000 000	3,03%
Mikael Kretz incl. company holdings	720 000	2,18%
Håkan Paulsson incl. family and company holdings	625 000	1,89%
Lars Andreasson incl. family holdings	400 000	1,21%
Claes Capital Consulting AB	363 480	1,10%
Mats Kullenberg incl. company holdings	314 829	0,95%
Granitor Invest AB	314 818	0,95%
Total, ten largest shareholders	18 325 169	55,46%
Other shareholders (approx. 6,000)	14 713 998	44,54%
Total	33 039 167	100,00%

### Share price development during 6 months



### Financial calendar

Crunchfish AB publishes financial reports after each quarter. Upcoming reports are planned to be published according to the schedule below:

#### Interim report Q3 2023

November 30th, 2023, 8:30 am CET

### Year-end report 2023

February 15th, 2024, 8:30 am CET

### **Accounting principles**

This report has been drafted according to the Annual accounts act (Årsredovisningslagen) and BFNAR 2012:1 (K3).

### **Auditor's review**

This report has not been subject to review by the company's auditor.

### **Company information**

Crunchfish AB (publ), corporate registration number 556804–6493, is a limited company seated in Malmö, Sweden.

### **Certified Adviser**

Västra Hamnen Corporate Finance AB is the company's Certified Adviser. E-mail: ca@vhcorp.se Phone: +46 40 200 250

### **Further information**

For further information, please contact: Joachim Samuelsson, CEO ir@crunchfish.com Crunchfish AB (publ) Stora Varvsgatan 6A 211 19 Malmö

## Statement by the Board of Directors and the CEO

The Board of Directors and the CEO hereby assures that this interim report gives a fair overview of the company's operations, financial status, and result.

Malmö, November 30th, 2023

The Board of Directors Göran Linder (chairman) Robert Ekström Susanne Hannestad Joakim Nydemark Joachim Samuelsson Malte Zaunders

This information is information that Crunchfish AB is obliged to publish in accordance to the EU Market Abuse Regulation. The information was provided by the contact person above for publication on November 30th, 2023.

## Group income statement (SEK)

	Q3 2023	Q3 2022	Q1-Q3 2023	Q1-Q3 2022	2022
Operating income					
Net sales	189 180	5 805 573	654 483	6 156 359	6 186 821
Own work capitalized	4 047 715	3 133 003	12 314 607	9 996 348	13 555 352
Other operating income	554 585	467 065	1 534 652	1 588 015	1 975 692
Total operating income	4 791 480	9 405 641	14 503 742	17 740 722	21 717 865
Operating expenses					
<b>Operating expenses</b> Other external expenses	-4 940 753	-3 644 164	-15 254 720	-11 771 283	-16 174 705
Personnel expenses	-4 940 755	-5 102 761	-18 306 396	-15 735 447	-10 174 703
Depreciation of tangible and intangible fixed asset	-1 238 565	-1 634 534	-3 552 217	-4 747 763	-6 138 787
Other operating expenses	-1 238 303	0 -1 034 334	-11 463	-4 /4/ /03	-1 856 868
Loss from participations in associated companies	0	-19 590	-11 403	-66 189	-67 871
Total operating expenses	-11 746 802	-10 401 049	-37 125 136	-32 320 682	-45 973 106
for a operating expenses	-11 /40 002	-10 401 045	-57 125 150	-52 520 062	-43 57 5 100
Operating profit	-6 955 322	-995 408	-22 621 394	-14 579 960	-24 255 241
Financial items					
Profit/loss from participations in group companies	0	0	0	0	-9 330
Other interest income and similar profit items	-6 663	96 972	259 170	216 889	254 527
Interest expense and similar loss items	-60 006	-1 948	-127 371	-18 689	-20 488
Profit or loss from financial items	-66 669	95 024	131 799	198 200	224 709
Profit or loss after financial items	-7 021 991	-900 384	-22 489 595	-14 381 760	-24 030 532
Profit or loss before tax	-7 021 991	-900 384	-22 489 595	-14 381 760	-24 030 532
Taxes					
Tax on income for the period	105 884	0	105 884	0	0
Profit or loss for the period/year	-6 916 107	-900 384	-22 383 711	-14 381 760	-24 030 532
Key figures					
EBITDA	-5 716 757	639 126	-19 069 177	-9 832 197	-18 116 454
Earnings per share	-0,21	-0,03	-0,68	-0,46	-0,77
Number of shares, average	33 039 167	31 436 298	33 039 167	31 095 631	31 313 537
Number of shares at balance sheet date	33 039 167	31 436 298	33 039 167	31 436 298	33 039 167
Earnings per share after full dilution	-0,21	-0,03	-0,68	-0,44	-0,77
Number of shares after full dilution, average	34 672 967	32 338 098	34 672 967	32 338 098	32 527 045
Number of shares after full dilution, balance sheet date	34 672 967	32 338 098	34 672 967	32 338 098	34 615 467
Namper of shares after fun dilution, balance sheet uate	54072 507	52 550 050	34012 901	52 550 090	54 015 407



## Group balance sheet (SEK)

Assets
Fixed assets
Intangible assets
Capitalized expenses for development work
Total intangible fixed assets
Tourible fixed encode
Tangible fixed assets Equipment
Total tangible fixed assets
Financial assets
Participation in associated companies
Deferred tax asset
Total financial assets
Total fixed assets
Current assets
Current receivables
Account receivables
Receivables from associated companies
Other receivables
Prepayments and accrued income
Total current receivables
Cash and bank balances
Cash and bank balances
Total cash and bank balances
Total current assets
Total assets

Sep 30, 2023	Sep 30, 2022	Dec 31, 2022
42 450 548	32 736 933	33 508 932
42 450 548	32 736 933	33 508 932
1 579 617	590 440	535 164
1 579 617	590 440	535 164
68 313	70 335	68 653
107 441	0	0
175 754	70 335	68 653
44 205 919	33 397 708	34 112 749
1 589 618	6 113 963	1 547 884
0	7 500	0
1 510 905 1 528 300	962 068 1 089 047	449 987 1 089 417
4 628 823	8 172 578	3 087 288
4020025	0172570	5 007 200
4 769 953	10 832 578	29 292 563
4 769 953	10 832 578	29 292 563
9 398 776	19 005 156	32 379 851
FD 604 605	F0 400 004	<i>cc</i> 105 555
53 604 695	52 402 864	66 492 600

### Group balance sheet cont. (SEK)

	Sep 30, 2023	Sep 30, 2022	Dec 31, 2022
Equity and liabilities			
Equity			
Equity attributable to parent company shareholders			
Share capital	1 519 802	1 446 070	1 519 802
Other contributed capital	276 131 340	253 679 582	276 001 326
Other capital including profit or loss for the year	-241 163 318	-209 100 912	-218 749 684
Total equity	36 487 824	46 024 740	58 771 444
Long-term liabilities			
Lease liabilities	1 006 532	0	0
Total long-term liabilities	1 006 532	0	0
Current liabilities			
Lease liabilities	498 297	409 349	383 485
Other current interest-bearing liabilities	7 500 000	0	0
Accounts payable	1 208 951	967 939	1 914 397
Other liabilities	883 277	755 732	777 788
Accrued expenses and accrued income	6 019 814	4 245 104	4 645 486
Total current liabilities	16 110 339	6 378 124	7 721 156
Total equity and liabilities	53 604 695	52 402 864	66 492 600
Key Figures			
Equity-assets-ratio	68,1%	87,8%	88,4%
Debt-to-equity ratio	21,9%	0,9%	0,7%
Interest-bearing net debt	n/a	n/a	n/a

## Changes in the group equity (SEK)

	Q3 2023	Q3 2022	Q1-Q3 2023	Q1-Q3 2022	2022
Equity at beginning of period/year	43 431 074	46 961 123	58 771 444	55 843 499	55 843 499
Share issues			0	4 599 000	26 077 445
lssue costs	0	-35 999	0	-35 999	-589 378
Translation difference	-27 143	0	-29 923	0	0
Warrant premiums	0	0	130 014	0	1 470 410
Profit or loss for the period/year	-6 916 107	-900 384	-22 383 711	-14 381 760	-24 030 532
Equity at end of period /year	36 487 824	46 024 740	36 487 824	46 024 740	58 771 444



## Group cash flow statement (SEK)

	Q3 2023	Q3 2022	Q1-Q3 2023	Q1-Q3 2022	2022
Operating activities					
Operating profit or loss	-6 955 322	-995 408	-22 621 394	-14 579 960	-24 255 241
Adjustments for non-cash intems	1 233 505	1 654 122	3 547 497	4 809 678	7 618 349
Interest received etc.	-16 509	117 492	22 026	136 963	30 585
Interest paid	-8 510	-1 948	-40 763	-18 689	9 748
Income tax paid	0	0	0	0	0
Cash flow from operating activities before					
changes in working capital	-5 746 836	774 258	-19 092 634	-9 652 008	-16 596 559
Cash flow from changes in working capital					
Decrease(+)/increase(-) in receivables	-1 756 337	-4 939 638	-1 541 535	-4 891 055	194 235
Decrease(-)/increase(+) in current liabilities	-279 103	-1 195 061	701 015	-1 815 004	-450 381
Cash flow from operating activities	-7 782 276	-5 360 441	-19 933 154	-16 358 067	-16 852 705
Investing activities					
Investmetn in technology development	-4 047 715	-3 133 003	-12 314 607	-9 996 348	-13 555 352
Investments in equipment	-641 403	0	-1 232 856	-60 202	-60 202
Cash flow from investing activities	-4 689 118	-3 133 003	-13 547 463	-10 056 550	-13 615 554
Financing activities					
Share issue	0	326 279	0	4 563 002	25 488 067
Loans from shareholders	7 500 000	0	7 500 000	0	0
New loans financial leasing agreements	641 403	0	1 232 856	0	0
Amortization of financial leasing agreements	-47 168	-34 444	-111 512	-151 235	-177 099
Warrant premiums paid	0	0	130 014	0	1 470 410
Cash flow from financing activities	8 094 235	291 835	8 751 358	4 411 767	26 781 378
Change in cash and cash equivalents	-4 377 159	-8 201 609	-24 729 259	-22 002 850	-3 686 881
Cash and cash equivalents at beginning of period/year	9 129 869	19 054 706	29 292 563	32 755 502	32 755 502
Exchange rate difference in cash and cash equivalents	17 243	-20 519	206 649	79 926	223 942
Cash and cash equivalents at end of the year	4 769 953	10 832 578	4 769 953	10 832 578	29 292 563

## Parent company income statement (SEK)

	Q3 2023	Q3 2022	Q1-Q3 2023	Q1-Q3 2022	2022
Operating income					
Net sales	3 877 295	3 864 190	12 988 129	13 172 493	17 915 726
Other operating income	554 585	467 065	1 499 267	1 561 056	1 948 733
Total operating income	4 431 880	4 331 255	14 487 396	14 733 549	19 864 459
Operating expenses					
Other external expenses	-2 332 180	-2 454 223	-7 193 473	-7 584 514	-10 147 595
Personnel expenses	-1 811 267	-1 954 629	-6 838 960	-7 006 001	-9 199 908
Depreciation of tangible and intangible fixed asset	-3 010	-4 973	-9 030	-15 674	-20 646
Other operating expenses	0	0	-2 286	0	-405 611
Total operating expenses	-4 146 457	-4 413 825	-14 043 749	-14 606 189	-19 773 760
Operating profit	285 423	-82 570	443 647	127 360	90 699
Financial items					
Profit/loss from participation in group companies	0	0	0	0	-28 700
Other interest income and similar profit items	194 005	157 971	551 216	334 535	541 405
Interest expense and similar loss items	-73 356	-2	-109 576	-2 516	-2 486
Profit or loss from financial items	120 649	157 969	441 640	332 019	510 219
Profit or loss after financial items	406 072	75 399	885 287	459 379	600 918
Profit or loss before tax	406 072	75 399	885 287	459 379	600 918
Taxes					
Tax on income for the period	0	0	0	0	0
Profit or loss for the period/year	406 072	75 399	885 287	459 379	600 918
Key figures					
EBITDA	288 433	-77 597	452 677	143 034	111 345
Earnings per share	0,01	0,00	0,03	0,01	0,02
Number of shares, average	33 039 167	31 436 298	33 039 167	31 095 631	31 313 537
Number of shares at balance sheet date	33 039 167	31 436 298	33 039 167	31 436 298	33 039 167
Earnings per share after full dilution	0,01	0,00	0,03	0,01	0,02
Number of shares after full dilution, average	34 672 967	32 338 098	34 672 967	32 338 098	32 527 045
Number of shares after full dilution, balance sheet date	34 672 967	32 338 098	34 672 967	32 338 098	34 615 467



### Parent company balance sheet (SEK)

Assets	
Fixed assets	
Tangible fixed assets	
Equipment	
Total tangible fixed assets	
Financial assets	
Participations in group companies	
Receivables from group companies	
Total financial assets	
Total fixed assets	
Current assets	
Current receivables	
Account receivables	
Receivables from group companies	
Other receivables	
Prepayments and accrued income	
Total current receivables	
Cash and bank balances	
Cash and bank balances	
Total cash and bank balances	
lotal cash and bank balances	
Total current assets	
Total assets	

Sep 30, 2023	Sep 30, 2022	Dec 31, 2022
42 109	56 111	51 139
42 109	56 111	51 139
123 187 804	91 973 208	123 057 790
32 766 495	19 248 884	0
155 954 299	111 222 092	123 057 790
155 996 408	111 278 203	123 108 929
673 162	6 062 463	1 547 884
0/3/102	101 664	0
524 230	1 493 046	211 928
1 217 363	1 039 050	1 089 417
2 414 755	8 696 223	2 849 229
2414755	0 000 220	2019229
4 089 445	10 655 507	28 509 210
4 089 445	10 655 507	28 509 210
6 504 200	19 351 730	31 358 439
162 500 608	130 629 933	154 467 368

### Parent company balance sheet cont. (SEK)

	Sep 30, 2023	Sep 30, 2022	Dec 31, 2022
Equity and liabilities			
Equity			
Restricted equity			
Share capital	1 519 802	1 446 070	1 519 802
Total restricted equity	1 519 802	1 446 070	1 519 802
Unrestricted equity			
Profit brought forward	149 171 615	126 118 939	148 440 683
Profit or loss for the year	885 287	459 379	600 918
Total unrestricted equity	150 056 902	126 578 318	149 041 601
Total equity	151 576 704	128 024 388	150 561 403
Current liabilities			
Accounts payable	482 813	324 097	978 120
Other current interest-bearing liabilities	7 500 000	0	0
Other liabilities	668 036	302 169	766 808
Accrued expenses and accrued income	2 273 055	1 979 279	2 161 037
Total current liabilities	10 923 904	2 605 545	3 905 965
Total equity and liabilities	162 500 608	130 629 933	154 467 368
Key Figures			
Equity-assets-ratio	93,3%	98,0%	97,5%
Debt-to-equity ratio	4,9%	0,0%	0,0
Interest-bearing net debt	n/a	n/a	n/a

## Changes in parent company equity (SEK)

	Q3 2023	Q3 2022	Q1-Q3 2023	Q1-Q3 2022	2022
Equity at beginning of period/year	151 170 632	127 984 988	150 561 403	123 002 008	123 002 008
Share issues	0	0	0	4 599 000	26 077 445
lssue costs	0	-35 999	0	-35 999	-589 378
Warrant premiums	0	0	130 014	0	1 470 410
Profit or loss for the period/year	406 072	75 399	885 287	459 379	600 918
Equity at end of period /year	151 576 704	128 024 388	151 576 704	128 024 388	150 561 403



### Parent company cash flow statement (SEK)

	Q3 2023	Q3 2022	Q1-Q3 2023	Q1-Q3 2022	2022
Operating activities					
Operating profit or loss	285 423	-82 570	443 647	127 360	90 699
Adjustments for non-cash items	3 009	4 972	9 029	15 673	20 646
Interest received etc.	225 938	214 425	358 544	341 205	461 235
Interest paid	-108 468	-2	-109 576	-2 516	-2 516
Income tax paid	0	0	0	0	0
Cash flow from operating activities before					
changes in working capital	405 902	136 825	701 644	481 722	570 064
Cash flow from changes in working capital					
Decrease(+)/increase(-) in receivables	-150 007	-6 598 033	434 474	-6 257 333	-512 003
Decrease(-)/increase(+) in current liabilities	-498 328	-1 107 752	-482 061	-1 361 369	-60 949
Cash flow from operating activities	-242 433	-7 568 960	654 057	-7 136 980	-2 888
Investing activities					
Investmetn in equipment	0	0	0	-60 202	-60 202
Disposals of shares in subisdiaries	0	0	0	0	16 300
Repayment shereholder contributions	0	0	0	370 000	370 000
Loans provided to group companies	-10 960 896	-332 271	-32 896 508	-19 633 884	-31 412 918
Change in cash deposits	0	0	0	0	0
Cash flow from investing activities	-10 960 896	-332 271	-32 896 508	-19 324 086	-31 086 820
Financing activities					
Share issue	0	326 279	0	4 563 002	25 488 067
Loans from shareholders	7 500 000	0	7 500 000	0	0
Warrant premiums paid	0	0	130 014	0	1 470 410
Cash flow from financing activities	7 500 000	326 279	7 630 014	4 563 002	26 958 477
Change in cash and cash equivalents	-3 703 329	-7 574 952	-24 612 437	-21 898 064	-4 131 231
Cash and cash equivalents at beginning of period/year	7 789 595	18 286 913	28 509 210	32 560 241	32 560 241
Exchange rate difference in cash and cash equivalents	3 179	-56 454	192 672	-6 670	80 200
Cash and cash equivalents at end of period/year	4 089 445	10 655 507	4 089 445	10 655 507	28 509 210

