

## Crunchfish enables mobile EMV payments offline

**Crunchfish AB (“Crunchfish”) broadens its patent pending Offline Wallet solution to support EMV offline payments as well. The offline balance securely maintained in the consumer mobile payment application enables EMV payments to be executed offline, as authorization happens offline upon payment initiation, instead of afterwards by a payment terminal connected online. Offering offline payment capability to the extensive international card infrastructure makes Crunchfish’s Offline Wallet solution significantly more scalable internationally. Partner discussions with the card infrastructure industry have been initiated.**

All digital payments are sensitive to online connection issues and potential downtime of the payment service, bank or electronic identification service. Crunchfish has a patent pending [pioneering innovation](#) where mobile payments are made independent of any online issues at the moment of payment. This is implemented in an Offline Wallet. The Offline Wallet is trusted application in a secure element that may be integrated in consumer mobile payment applications. It handles cryptographic information, an offline balance and transaction logs with banking grade security. The secure element [V-OS](#) is provided by [Crunchfish’s partner V-key](#).

Tokenized EMV payments are cryptographically signed by the payer and verified online to certify the payer identity before confirming that sufficient funds are available on the payer’s online bank or card account. With Crunchfish’s patent pending Offline Wallet the control that sufficient funds are available is performed offline and before the payment is initiated by the customer, in contrast to online and afterwards by a payment terminal connected to the EMV infrastructure rail. This is the only difference as payments originating from Crunchfish’s Offline Wallet may also be cryptographically signed EMV tokens, but with the added benefit that any type of merchant device may verify and reconcile the payment offline.

*“The digital payments market is changing rapidly. A recent trend is that instant payment services providers partner with the card industry to create better solutions with more market reach. In this extremely competitive landscape, Crunchfish brings a novelty that offer secure offline mobile payments regardless of what rail is used for online settlement”, says Crunchfish’s CEO Joachim Samuelsson.*

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**About Crunchfish – [crunchfish.com](http://crunchfish.com)**

Crunchfish develops and markets interaction solutions for mobile payment in a physical environment. Crunchfish’s proximity-based technology connects a customer’s mobile phone to a payment service in a Point of Sales terminal

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at a merchant, and even has a patent-pending innovation for payments when both the customer and merchant are completely without connection to the payment service. The solutions are marketed to payment apps, cash register providers and merchants in Sweden and India, as well as to multinational companies.

The company also develops interaction solution based on gesture control and has integrated that technology into millions of smartphones currently on the market. Today, development of the gesture control technology is focused on smart, AR glasses.

Crunchfish has its headquarters in Malmö, Sweden. The company also has offices in Stockholm and representation in India. The company drives its businesses through two subsidiaries, Crunchfish Proximity for proximity-based interaction for mobile payments, and Crunchfish Gesture Interaction for gesture control for smart, AR glasses. Crunchfish was founded in 2010 and is publicly listed on NASDAQ First North in Sweden since 2016.