

Crunchfish Implements Digital Cash on Cards

One year ago, Crunchfish announced a breakthrough innovation of Digital Cash using a two-tier settlement architecture, offline vs. online. Now this ground-breaking solution is extended to also include Digital Cash on cards. By tapping a card on a mobile a user may top-up a balance on the card or alternatively pay to an offline wallet on the mobile. These use cases are relevant for the payment schemes of today as well as CBDC to ensure financial inclusion by supporting a bearer instrument that is very simple to use.



SE: Secure Element, HCE: Host Card Emulation, OEM: Original Equipment Manufacturer.

"The current payment solutions are online schemes based on cards and mobile payment. Now we provide a Digital Cash solution to both mobile as well as card implementations. This innovation for cards is just as ground-breaking as last year's innovation for mobiles", says Joachim Samuelsson, CEO of Crunchfish.

Crunchfish announces a new patent pending innovation with application number SE2150109-3 that extends offline frictionless mobile payments to also support payment cards. This is especially important in CBDC implementations as cards as a bearer instrument is important to ensure financial inclusion. The innovation Crunchfish brings is that cards can be topped-up and used much easier. By simply tapping a card on a mobile the user may top-up the balance on the card or alternatively pay to an offline wallet on the mobile. The Digital Cash cards may also be implemented with the dual functionality of both maintaining a balance on the card in addition to supporting EMV card rail payments as shown in state-of-the-art card payment implementations such as [NPCI's RuPay Contactless](#) card scheme in India that integrates the National Common Mobility Card wallet used for public transportation payments.

One year ago Crunchfish announced [offline frictionless mobile payments](#) as a patent pending innovation, making mobile payments services far more robust by introducing the concept of Digital Cash using a two-tier settlement architecture, offline vs. online. The solution leverages the fact that it is not important to the merchants if the transfer to their accounts occurs at the moment-of-payment or a little later, as long as there is trust that the transfer will occur. It is critical however, that the payment experience must be robust, smooth and secure. This implies that the transaction cannot be dependent on the net and cloud payment services. No

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matter how much investments are made into IT-infrastructure, the systems will never be operational 24/7. An ingenious solution is simply to implement this two-tier settlement architecture. Recently, the same approach was proposed by [VISA in a research paper](#) describing an Offline Payment System (OPS) protocol applied to CBDC. Crunchfish's original solution was not however limited to CBDC, but equally applicable to all payment schemes – Card, Real-Time Payments and Closed-Loop Wallets.

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About Crunchfish – crunchfish.com

Crunchfish is a tech company with patent-pending solutions for digital cash that can be integrated with both the payment rail and in mobile wallets. The solutions are globally scalable and makes digital payments more robust as the risks of disruptions and downtime are eliminated. We have also developed Blippit, an app terminal that connects to cash register systems for both online and offline payments and have a patent-pending solution to reduce food waste. Crunchfish also develops gesture control of smart AR glasses for the consumer market. Crunchfish is listed on Nasdaq First North Growth Market since 2016, with headquarters in Malmö, Sweden and with representation in India.