

To the Riksbank

Date

20/10/2017

Reference

E-krona technical  
questions

## **SEB response to the Riksbank e-krona technical questions**

It is with great interest we follow the Riksbank ideas and proposal around a Central Bank backed Digital Currency. As a bank SEB plays an active part in the development of the societies in which we operate. We do this trying to take a holistic perspective including societal, ethical, environmental and technical standpoints. We are a true supporter of having an efficient payment infrastructure offered to all citizens, residents and businesses in Sweden as well as people and businesses outside Sweden needing to access and execute payments inside, into or out from Sweden. We support overall principles like that this infrastructure should be open to all except for exceptional cases such as terrorism financing, child abuse, trafficking and other criminal activity.

Depending on the final approach the e-krona could have more or less pro-found impact on the banking system. Such impact would fall under the liquidity and stability aspects of introducing the e-krona and is not in scope for the technical questions answered in this response. We understand that the Riksbank will continue to discuss these other, non-technical and wider, aspects of an e-krona during the course of the project. We think it is important to engage in these dialogues.

We are willing to engage in a dialogue on different technical solutions and share our experience of digital money.

### **1 - What would a technical solution for a register-based e-krona look like?**

We have identified several possible solutions, ranging from the Riksbank setting up an independent payment solution and offering e-krona accounts and related services to citizens, to solutions based on today's infrastructures. We believe our proposal is a cost efficient solution with reasonable time to market since it is an already existing and proven solution albeit with some additions as per below.

The proposed solution is based on the Swish/BiR infrastructure which is separate from the Bankgiro products such as the other clearing systems run by the Bankgiro and hence would address the Riksbank's concerns of high concentration in the payment system. To also cater for providing the e-krona efficiently to citizens the solution would need to include a new registry/ledger for the e-krona. This registry could be connected to BiR in the same way as the banks.

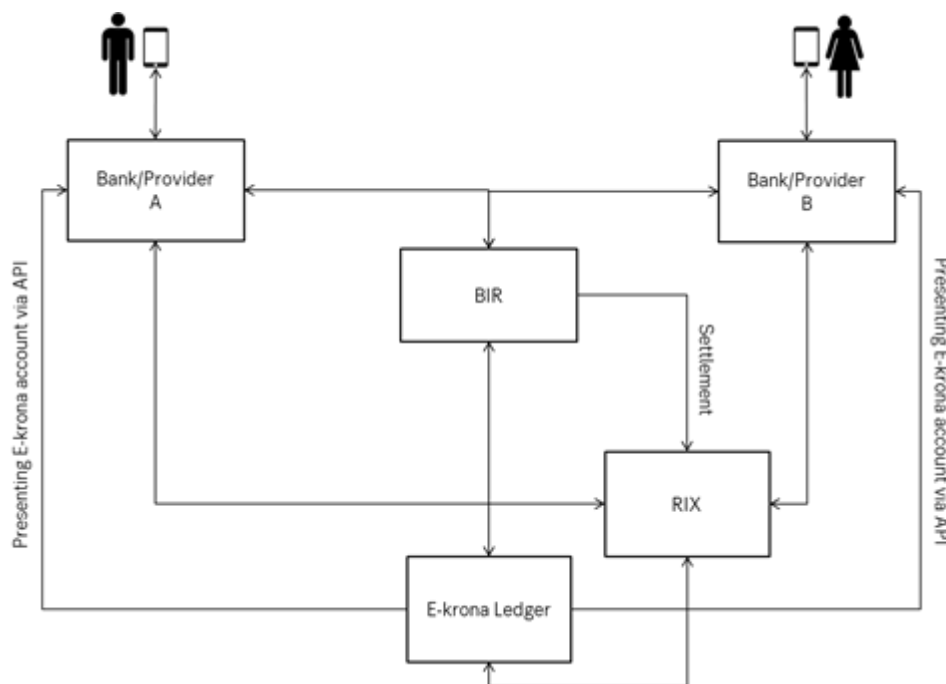


Figure 1. E-krona based on the existing Swish/BIR infrastructure

This solution supports a number of desired features like potential interest on the e-krona accounts, emergency breaks in the existing infrastructures and relieving the Riksbank of supporting customer interactions.

## 2 - What would a technical solution for a value-based e-krona look like?

We have interpreted the value based solution to be completely without a registry, i.e. the value is stored solely on a card/app/device and not mirrored in another system. However, to date we didn't find any solutions that are secure enough in our perspective. Travel cards, pre-paid SIM cards (mobile phones) etc all rely on a central registry, the card itself is merely a representation of the user. Albeit its name, the cash cards introduced in the mid-1990s had a registry based solution. Currently we do not see today's technology supporting a true value based solution mimicking cash that is secure enough, but that's not to say there won't be technology fulfilling the requirements in the future and so we are watching this space as it evolves.

## 3 - What challenges and opportunities do you envisage with each e-krona solution?

The challenge is mainly costs and time it takes of building an infrastructure which reaches the population of Sweden including businesses if starting from scratch. That is why we propose a 'registry solution' based on existing infrastructure that already has a very good reach. Another challenge is that the system will probably be domestic and therefore non-residents and businesses outside of Sweden will still need a more global infrastructure such as the card infrastructure (Mastercard, Visa etc).

There is also the possibility to introduce other devices than smart phones to the Swish network should there be a demand for that. However reaching people that for some reason do not want digital devices or cards would of course still be a challenge.

## 4 - What is your vision for an e-krona, are there other possible solutions than register-based and value-based that you consider to be more appropriate?

Focusing on the technological solutions we propose a solution based on existing proven systems, however, we believe blockchains and distributed ledger technologies (DLT) will emerge and have profound impacts on the financial infrastructures and the way they are constructed today. As an

example, if both cash/money and assets were represented on a common ledger, we could create new financial infrastructure far more efficient than what exists today, e.g. the number of intermediaries could be reduced and also risks in the systems would be greatly reduced.

We are keen to participate in discussions with the Riksbank on these ideas going forward.

**5 - What is missing in our concept?**

Since building new technology infrastructure is such a complex venture we believe it would be beneficial to do it in co-operation with others. We believe building the e-krona should be done in close collaboration with others in order to create a globally viable infrastructure.

Yours sincerely,

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