

Blockchain and Telcos

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A quick introduction

- > Franco-Swiss
- > Father of three
- > Telecom Engineer and PhD in the 90's in Paris
- > A career dedicated to Research
- > Last 10 years in Innovation Management
- > Responsible for the “Security and Intelligence” Product Unit
- > Started and manage Blockchain activities at Swisscom for the last 2 years
- > Chairman of the SG17 Blockchain Focus Group at the ITU





Outpost



Innovations



Venturing



Hyperledger



E-Foresight



Our Strategic Focus

Three classical columns of varying heights and widths, arranged from left to right. Each column is topped with a capital and stands on a base. The columns are white and set against a blue background. The first column is the tallest and widest, the second is medium, and the third is the shortest and narrowest. Each column has a white oval callout box at its base containing text.

#1 Finance,
Health, Energy,
Government

#2 Horizontal ICT
services

#3 Efficiency

Exploration



Partnerships



**RFP – Offers –
Consulting**



A first partnership with UBS

- > A loyalty program with more than 40+ affiliated commercial partners
- > Enables physical and online transactions
- > Simple conversion rate
“1 Point = 1 CHF”
UBS reimburses partners for KeyClub points spent on goods

The free bonus program for UBS clients

UBS KeyClub is our way of saying thank you for making active use of our basic banking services. The points collected can be redeemed on a 1:1 basis like cash with our numerous KeyClub partners. You can also benefit from attractive special offers and discounted event tickets.

Why focus the partnership on a Loyalty program?

- > A strategic driver!



THE WALL STREET JOURNAL

Preparing for a World Without Cash

The Federal Reserve has done almost nothing to study how a digital currency might work.

By MAX RASKIN and DAVID YERMACK
Aug. 4, 2016 7:24 p.m. ET

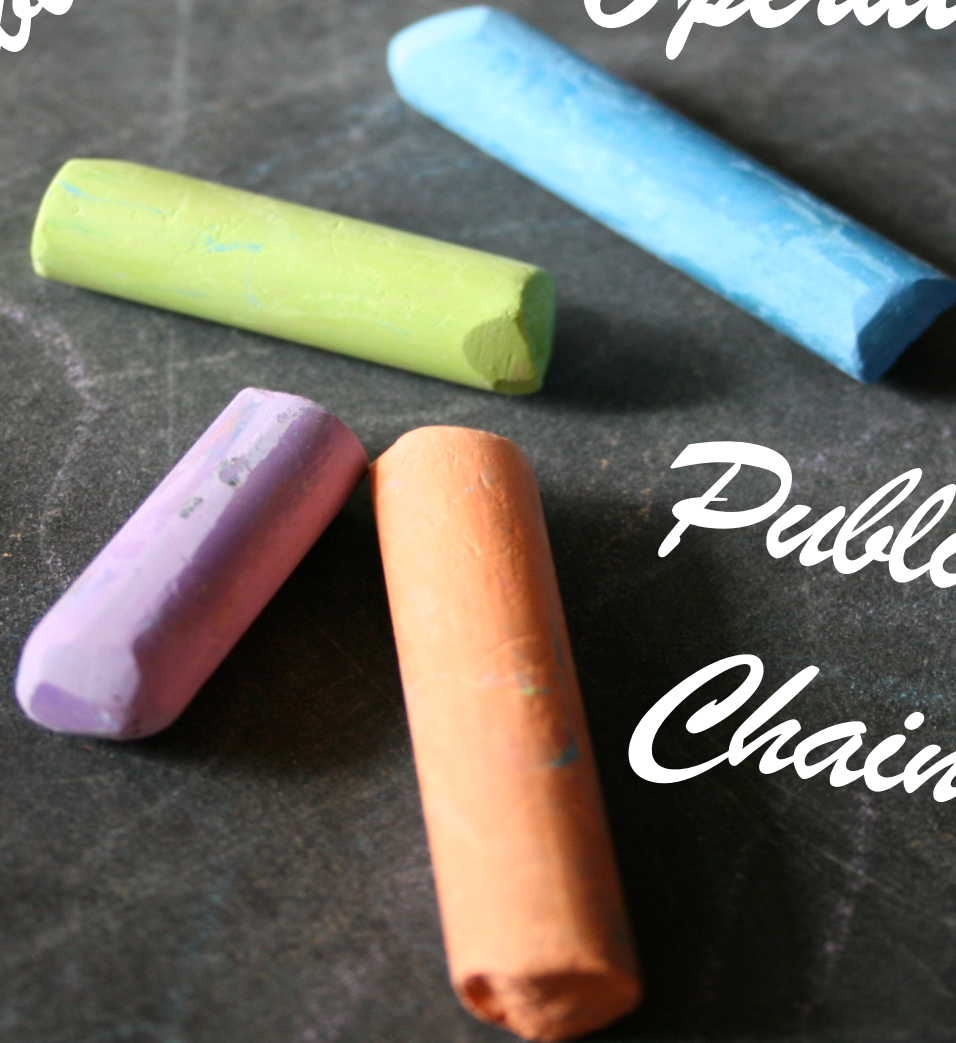
Central bankers throughout the world, from Canada to Ireland, have recently indicated that they might issue digital currency in the future. Yet the U.S. has been absent from the debate. As the world's central monetary power, America should play a leading role in studying the benefits and pitfalls of a digital-currency future. While plenty of risks would come with such a conversion, the potential perks are so great that it merits serious consideration.



- > A tactical driver: KeyClub points present all the characteristics of a real currency but without its regulatory constraints
- > An ideal space for experimenting new concepts, e.g. "Smart Money"

Ethereum capabilities

*Business &
Operational Models*



*Public vs. private
Chains*

OTC Swiss Blockchain

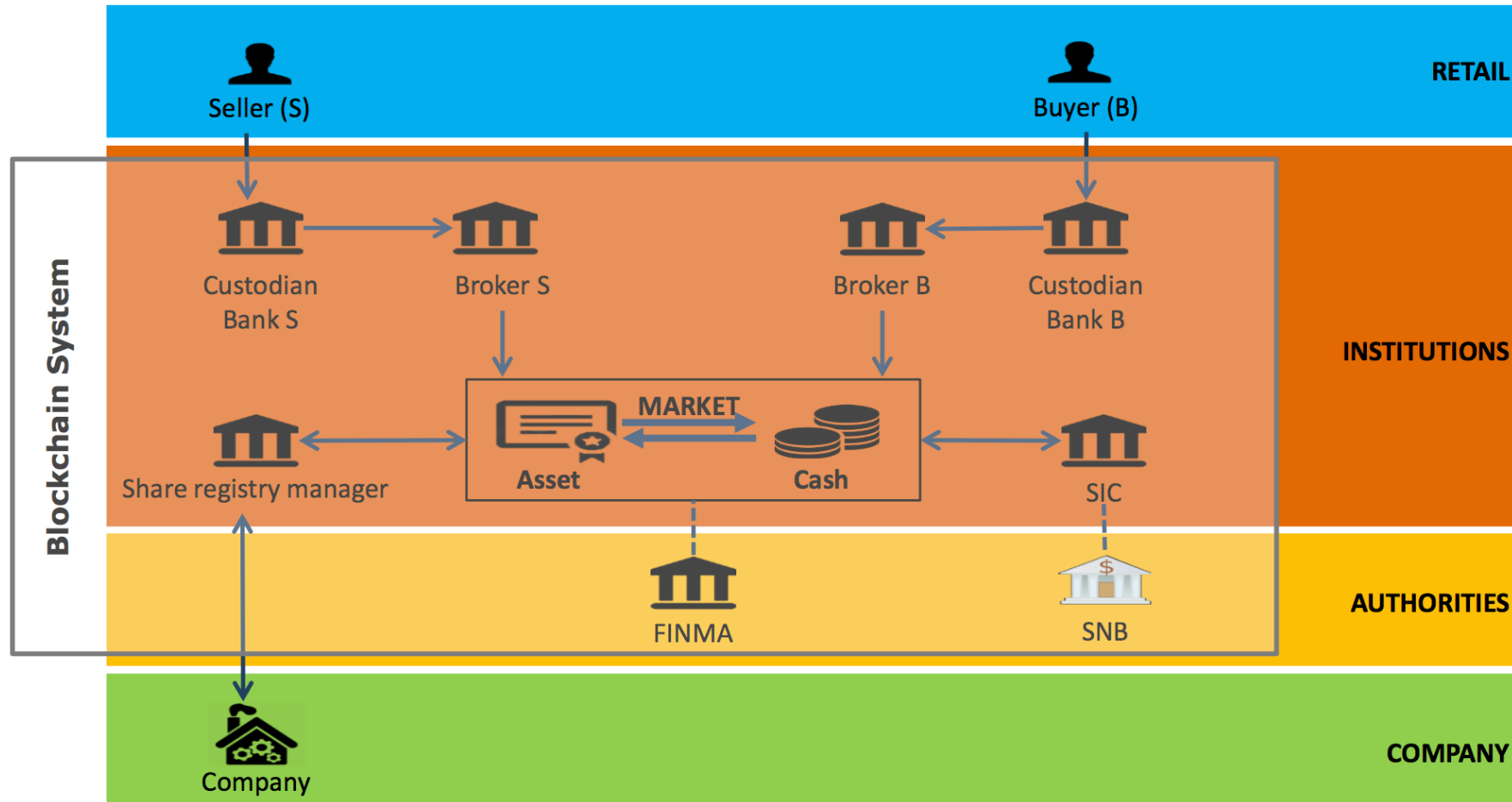
The first Over-The-Counter
Clearing and Settlement System on the Blockchain



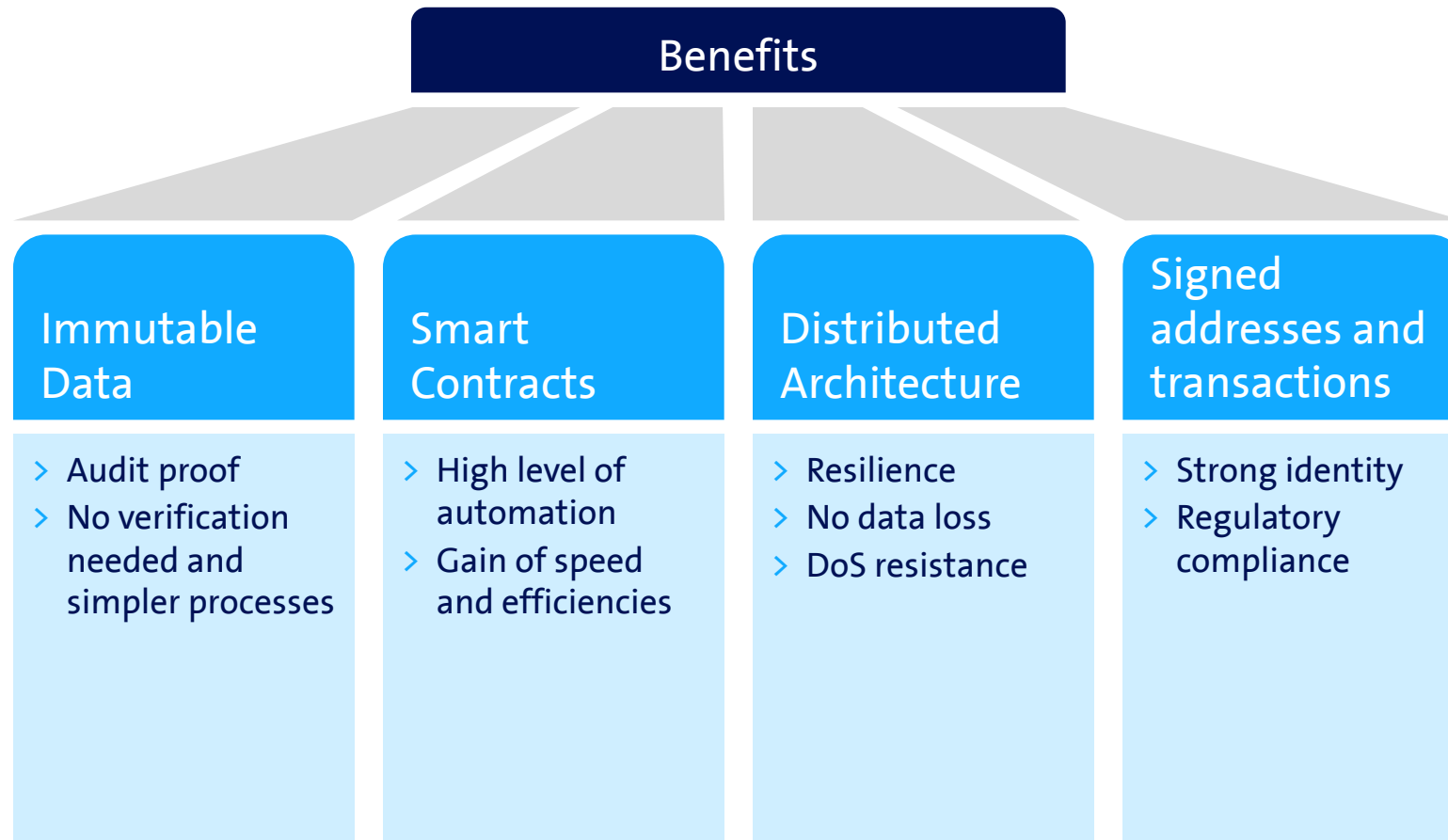
www.otc-blockchain.ch



What is an “OTC”?



Why use Blockchain for OTC?



A private blockchain design from the onset

All participants are known

Enforced **registration** and **access control**



But this was not sufficient...

	Sell order customer	Buy order customer	Sell order data	Buy order data	Trade data
Seller custodian	Visible	Hidden	Visible	Hidden	Visible
Buyer custodian	Hidden	Visible	Hidden	Visible	Visible
Other custodians	Hidden	Hidden	Hidden	Hidden	Hidden
Seller broker	Hidden	Hidden	Visible	Hidden	Visible
Buyer broker	Hidden	Hidden	Hidden	Visible	Visible
Other brokers	Hidden	Hidden	Hidden	Hidden	Hidden
Regulator	Visible	Visible	Visible	Visible	Visible
Share registrar	Visible	Visible	Visible	Visible	Visible
Payment services	Hidden	Hidden	Visible	Visible	Visible



We had to strike a balance

- › Smart contracts are good for **decentralized data processing**
- › Data stored in blockchain are **public** to all participants
- › Encrypting data **reduces** smart contract abilities to process the data



The solution

Privacy	Decentralization
<ul style="list-style-type: none">* The data is encrypted and visible to participants according to the privacy model* Smart contracts do not know the content of the order or trade* Smart contracts know the participants of the order/trade (Custodians, brokers, share registrar and regulator)	<ul style="list-style-type: none">* Smart contracts control the lifecycle:<ul style="list-style-type: none">- Order states: pending, processing, filled- Trade states: open, confirmed, paid* Smart contracts enforce who can change the order/trade states



ethereum

- Very limited storage
- Mining
- Limited transaction throughput
- Encrypting data for privacy reduces smart contract abilities to process the data



HYPERLEDGER

- Simpler consensus
- More complex objects
- CA and PKI
- Encrypt transactions
- Channel concepts

Roaming

- exchange rate handling
- invoicing (and issue of credit notes)
- reconciliation of incoming invoices
- netting of invoices
- payment instructions/ notifications
- bank orders
- reminders, account monitoring
- reporting
- VAT reclaim

Visited Network

Payment

Data

Clearing Houses

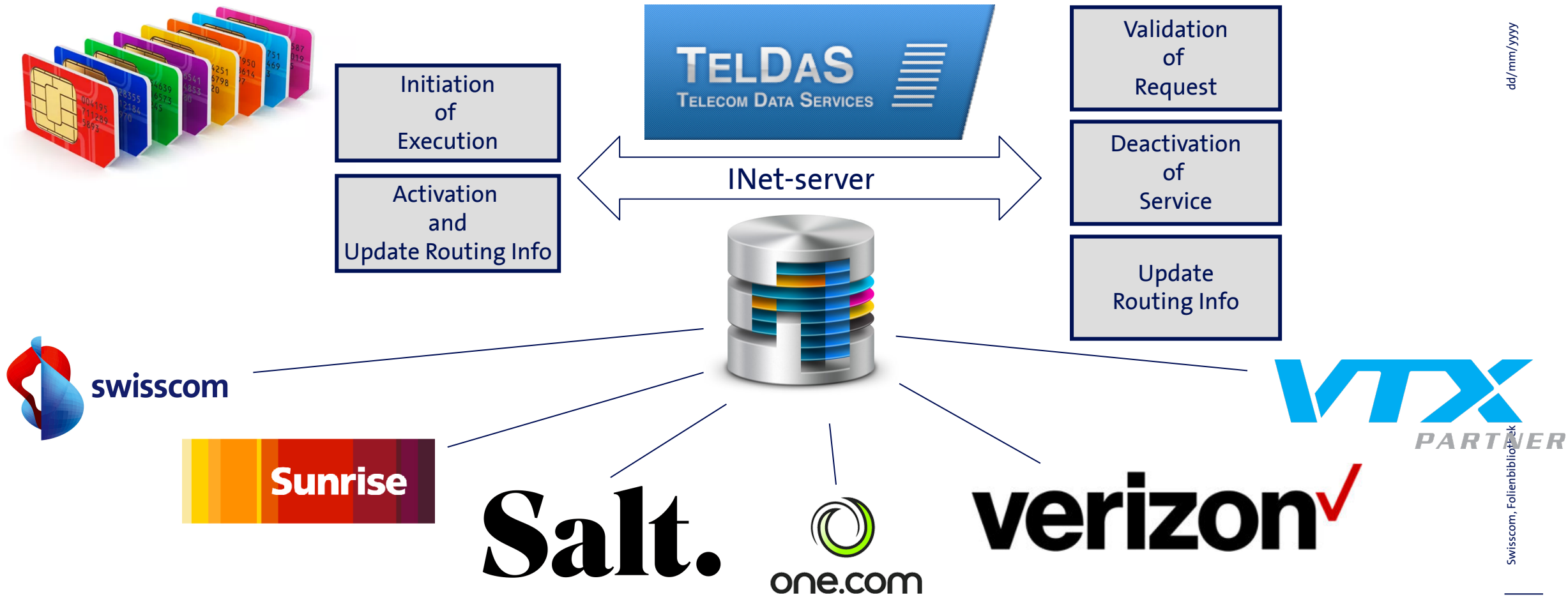
comfone
Excellence in Roaming

Syniverse[®]
We make mobile work

tns
SMART NETWORK™

Home Network

Number Portability



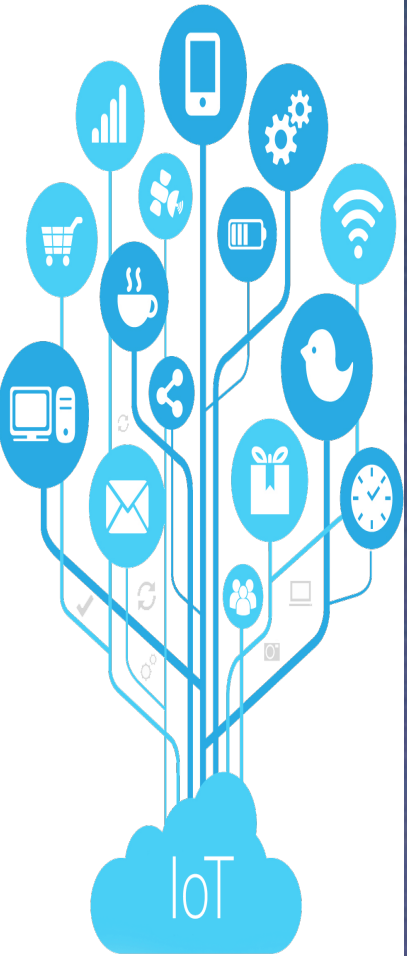
Firmware update program

Update Firmware?

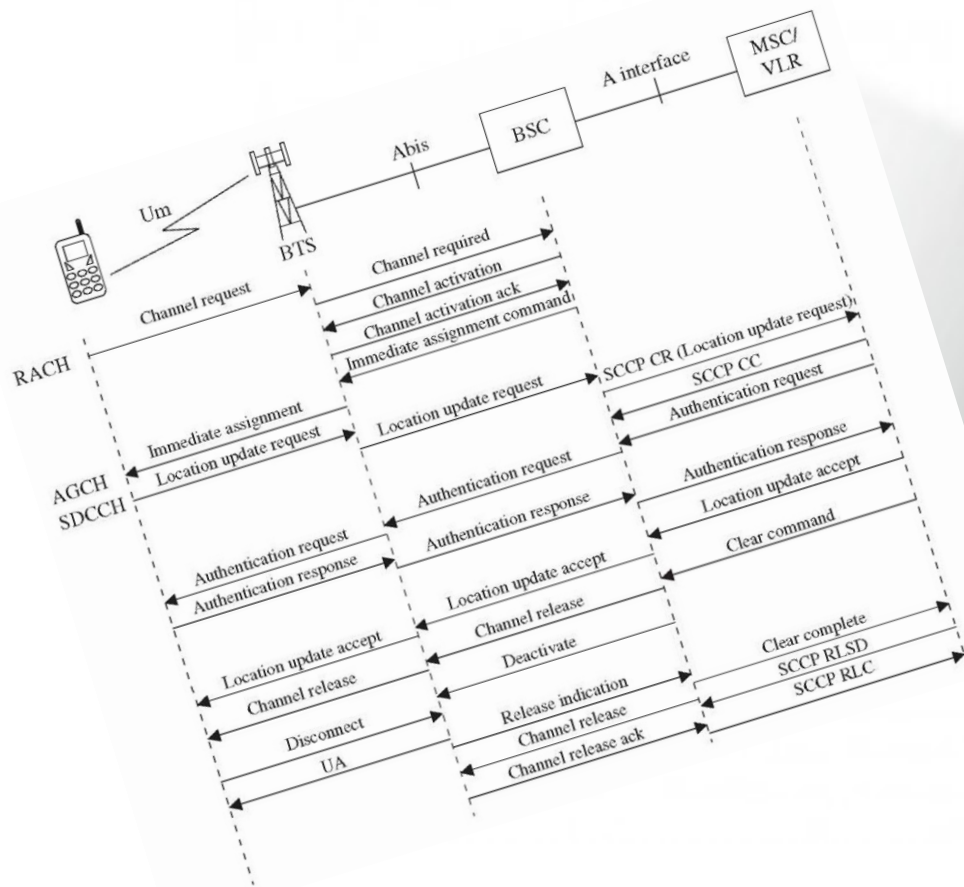
1.0.6 → 1.0.9

Cancel

OK



New scenarios with eSIM?



Conclusion

- > A real market demand is emerging
- > However the technology is still evolving at a high pace (e.g. Consensus algorithms; Enterprise Ethereum Alliance)
- > We observe a higher demand for private chains with some requirements which are still getting further away from the original design (e.g. Oracle and Cryptlets)
- > We shall tackle our phases 2 and 3 pretty soon. Reach out if you are interested.