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ID Proofing

Using signals and artifacts to prove identity

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Introduction

Github: <https://github.com/mitfik>

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StackOverflow: <https://stackoverflow.com/story/robertmitwicky>

GPG: 4096R/B05F95B3 2019-01-11

DID: did:sov:9mmc2QB3dssWz1sVSMMccg

Passport number: EE12651234

PESEL: 8201057842

SV: 832738820105

Note: that all above are just credentials, it is easy to take over them. Who controls them controls your identity.



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What is identity?



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What is identity?

„What makes it true that a person at one time is the same thing as a person at another time”



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What is identity?

„What makes it true that a person at one time is the same thing as a person at another time”

So “what matters” is not identity but
Continuity of consciousness, personal persistence or self-continuity

It is not about your credentials or soul (reincarnation) or the body

- Derek Parfit's teletransportation problem - Divided Minds and the Nature of Persons
- Stanisław Lem – “Dialogi – Fourteenth Voyage

How you loose/change your identity?

- Lost / destroyed documents / keys?
- Lost memory?
- The person changed so much that I do not recognize him anymore

Notice that identity dynamically change all the times, is not static.



What is the purpose of Identity?

I want to make sure that I am dealing with right:

- Person
- Thing
- Car
- System
- Data ...

but in the sense that it is allow to interact with you.

Note: So you don't want to authenticate it but authorize



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Forget about **Identity** and **Authentication** focus on **Identifications** and **Authorizations**

- Authentication – (verification) proof who you are
- Authorization – (permission) proof that you are allow to do what you are trying to do



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Forget about Identity and Authentication focus on Identifications and Authorizations

Authentication **IS NOT** mandatory



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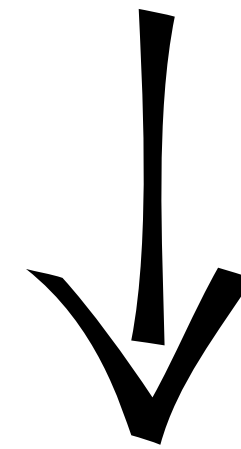
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Forget about **Identity** and **Authentication** focus on **Identifications** and **Authorizations**

Authentication **IS NOT** mandatory



Authentication **IS NOT** needed

identity is pointless in technical sense – it does not exist



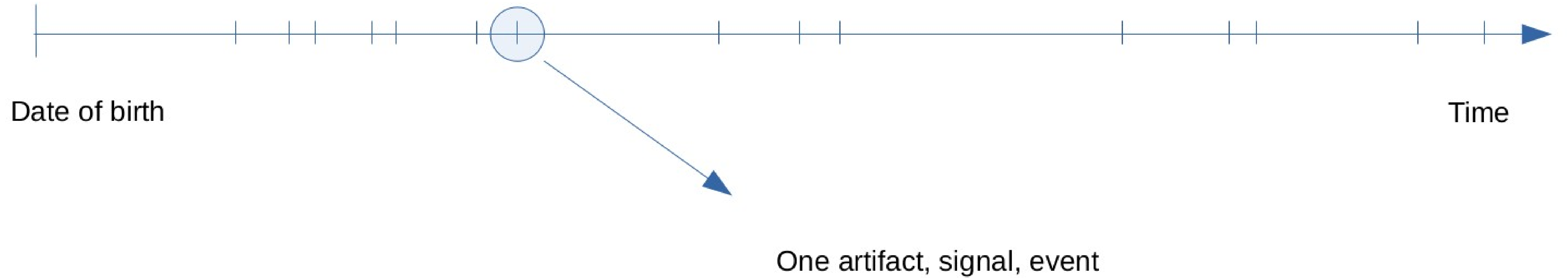
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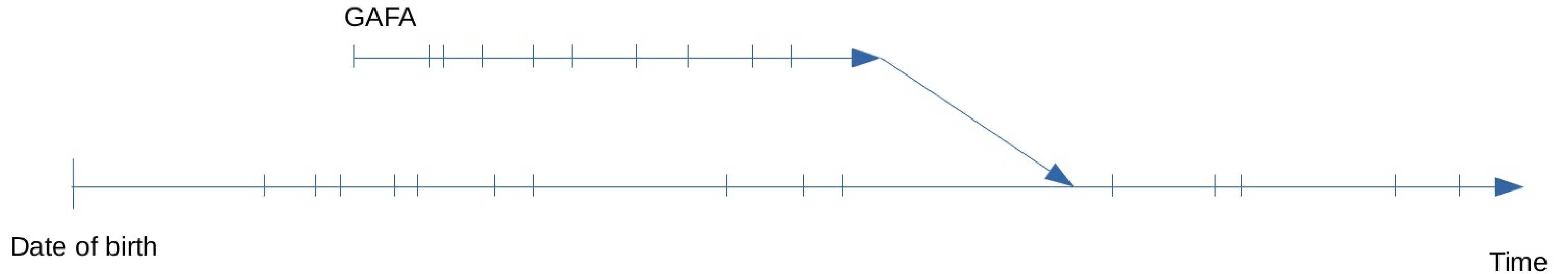
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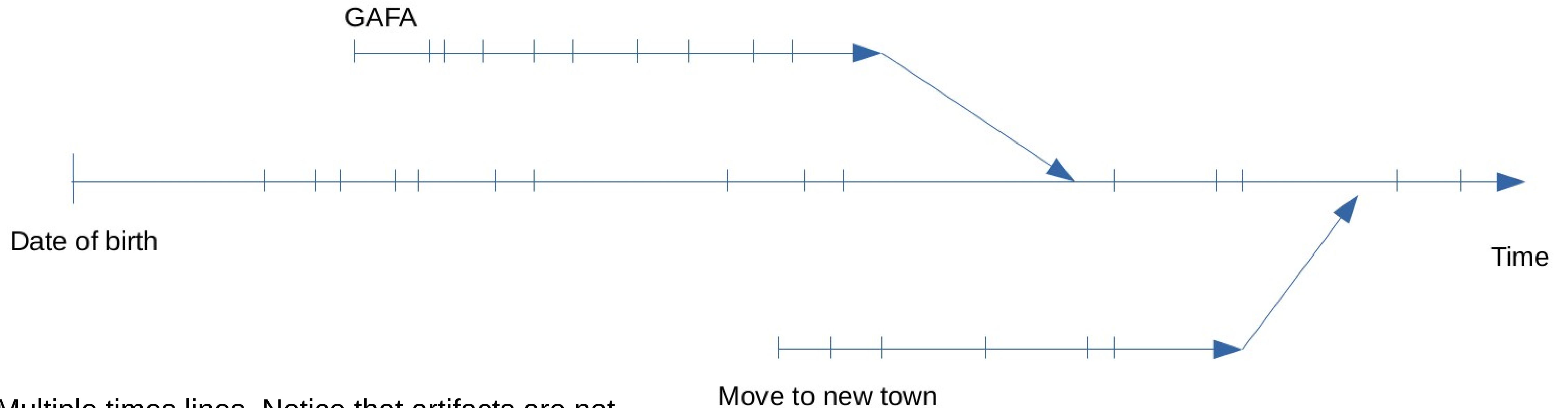
Identity timeline



“Proof of Presence”



“Proof of Presence”



Multiple times lines. Notice that artifacts are not dropped only on your timelines but as well on some else timelines in the same time. This make the identity by design decentralize as everyone who you every interact with keeps small bits of your identity

Artifacts and Signals

- Proof that you summit K2 – dropped artifacts on top
- Ebay – don't care who you are until you have a good trace on the platform → reputation + comments
- Service for adults - currently - date of birth. Ok, but easy to fake. Instead better would be getting signals about you which could prove that you are above certain age (adult) - regular monthly ticket for a bus, driving license, anything from university like diploma etc.
- Picture from conference – hard to fake all of them.
- Shared „secret” among local community
- Patterns – GSM example
- Financial systems – credit cards example
- Browser fingerprint, FB pixel
- WIFI mac address – Big building example

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There are already companies out there that sell WiFi and Bluetooth scanners designed to be fitted to street lamps, bollards, traffic signals, and more – for purpose of collecting different types of information (artifacts).



Is not Boolean is always %

It is never a boolean, always a degree of confidence or assurance.

Probability based risk model + threat analysis + other source to mitigate/change risk and make it measurable



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How you Identify and Authorize?

It is never a boolean, always a degree of confidence or assurance.

- Data Attributes
- Observation
- Credentials
- Behaviors
- Compare present artifacts to previously captured
- Infinite amount of signal sources
- Advanced correlations and data analytic



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How it could work?

- Digital Wallet with Microledger
- Peer to Peer communication network for monitoring – user decides what to track, DID Auth
- Define signals and artifacts and processes behind collecting data and verifying them, what is right what's not, who decided about it?
- Use existing systems as a source of signals

How it works now?

- Using side channel signals to detect malicious software on IOT (DARPA)
- Detecting emotion with wireless signals (MIT)
- UK plans to bring WiFi to street lamps
- Banks fraud detection systems



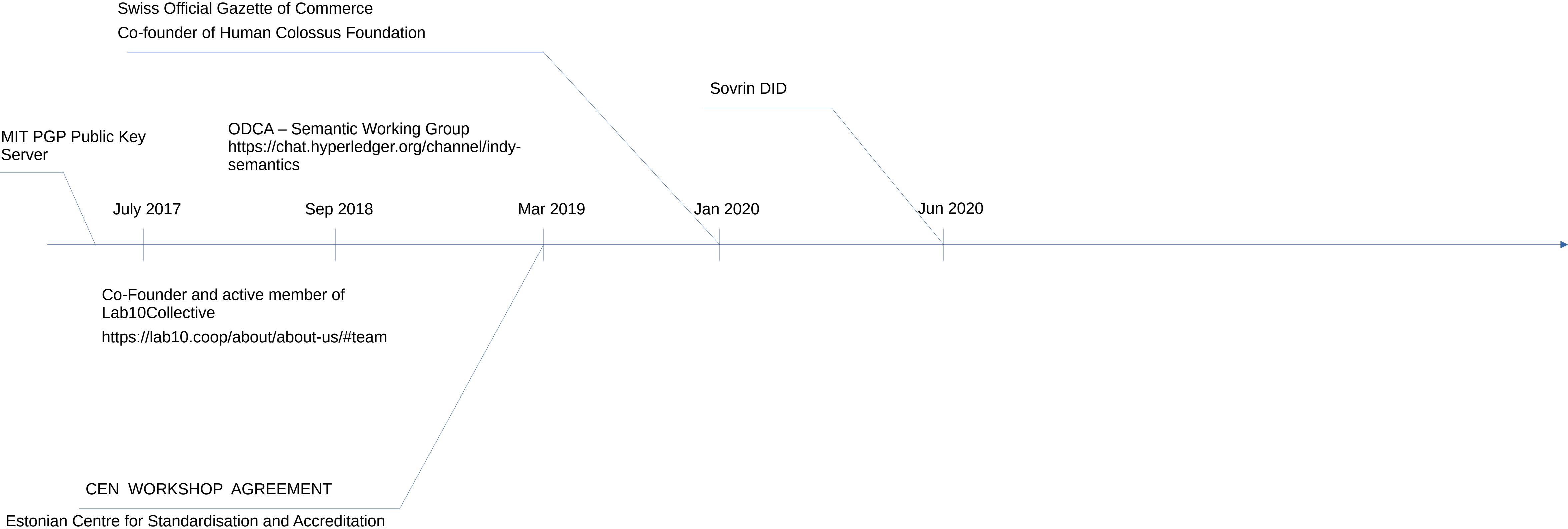
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Introduction v2



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