

Blockchain technology in the implementation of the concept of individual pension capital

АИПФ



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About the company and speaker

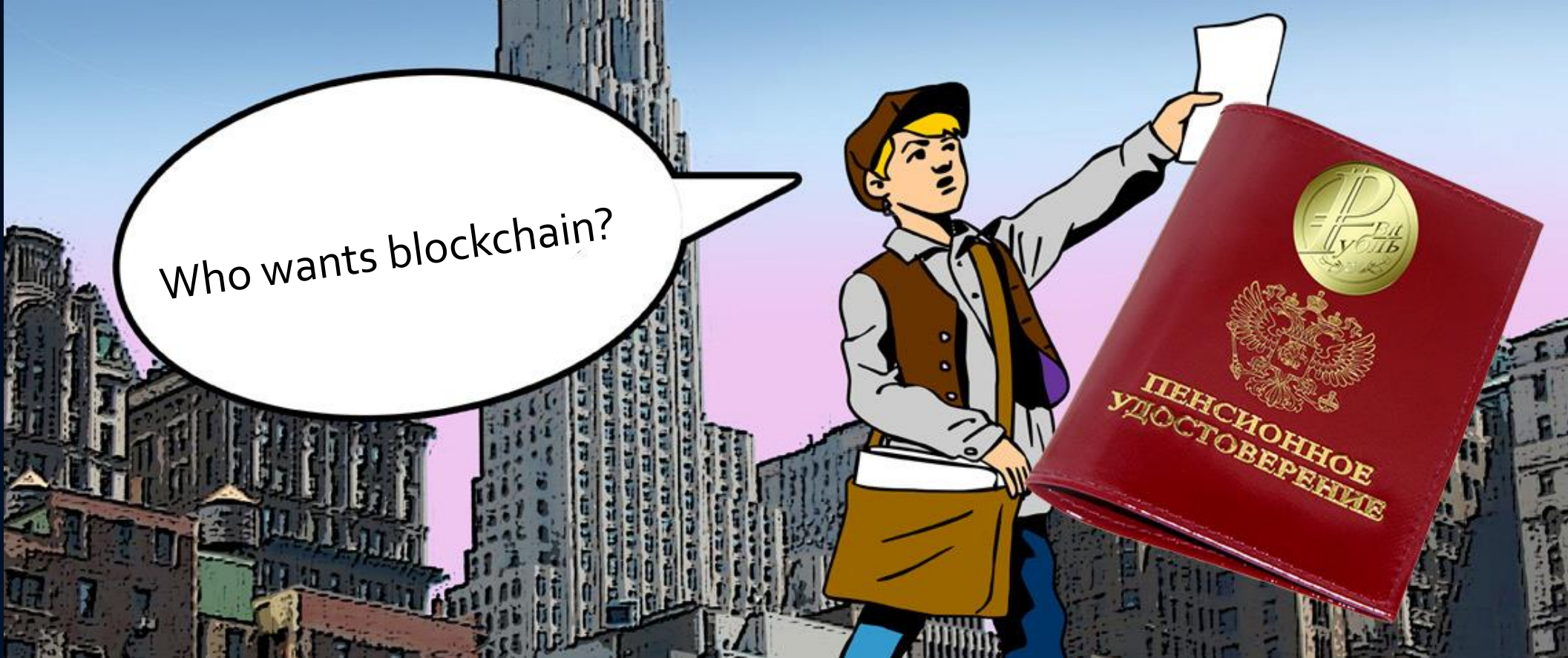
- Graduate of the Higher School of Economics and the LSE
- Processing market experience since 2004
- Sberbank, Alfa-Bank, CyberPlat, QIWI, FLEXSOFT
- Predprocessing company works since 2010
- We work with banks, utilities and payment systems
- Blockchain applications development and consulting
- Official representative of COINSBANK and OPENLEDGER
- Co-founder of IBCG community



OPENING BLOCK CHAIN

Blockchain characteristics

- Fault tolerance
- Multi-user environment
- Uniqueness
- Binding Data to Time
- System resistance to attempts to falsify data by it's participant
- Accessibility



Who wants blockchain?

There is an offer to transfer on blockchain technology the main functions of the central account administrator: keeping the client's register, tariffs informing, information on employers' contributions to NPFs, accounting for transfers between NPFs, keeping personal accounts and accounting of payments.

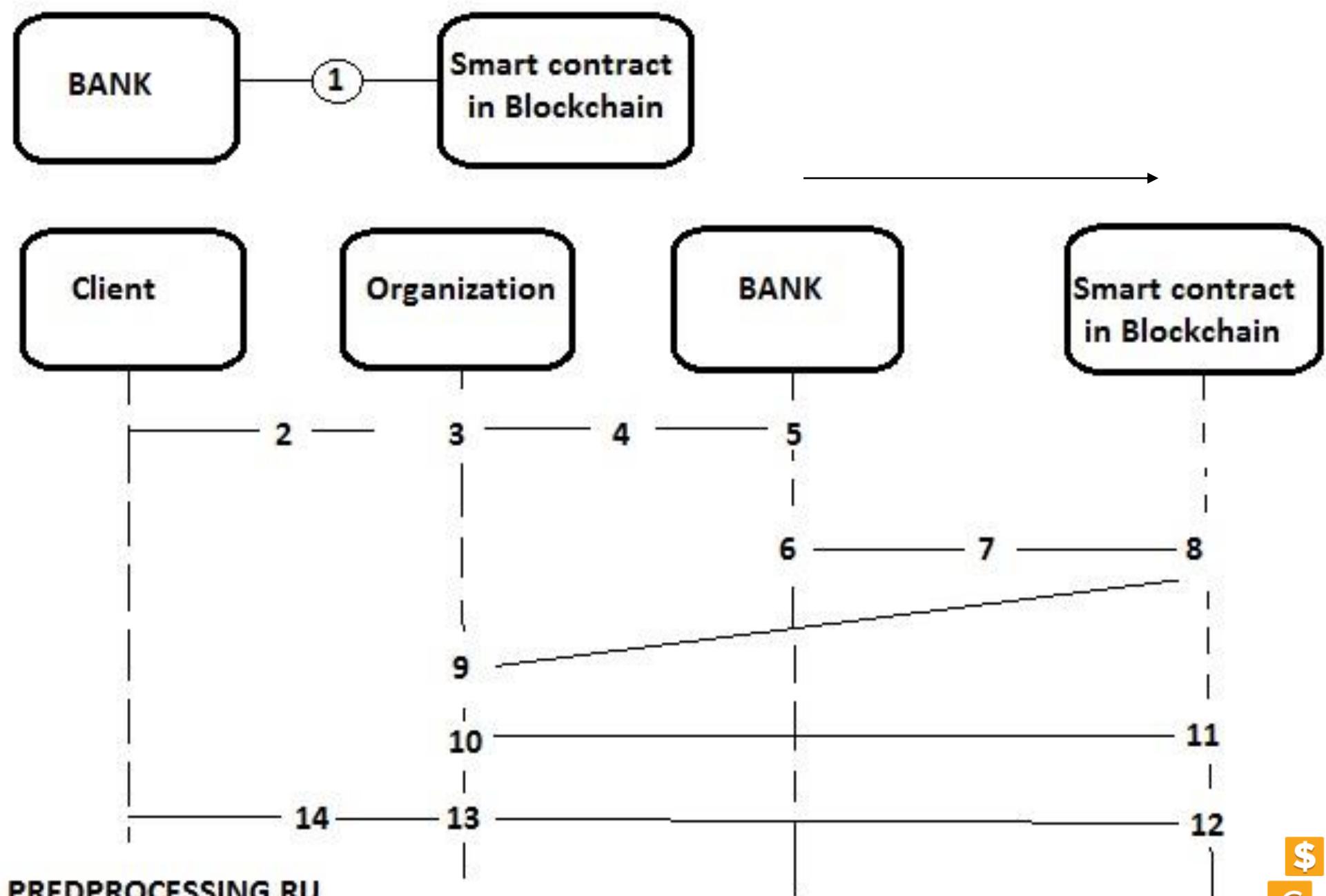
Blockchain features for NPF 1.0: minimum set of features

- Non-classic public blockchain, but with the distribution of rights and access by EDS
- Delegated Proof of Stake (DPoS) algorithm
- Editable smart contracts (the law is code, but not code is the)
- Crypto signs premining (emission) inside the ecosystem
- Limited nodes (nodes): APF, CB, DIA, FIU. $PFR + CB + DIA > 51\%$
- Absence of POW-mining
- Individual Persons (IP) are the cryptocurrency (tokens) owners

Blockchain for NPF 2.0: Possible feature

- IP – ecosystem's node (node)
- All NPF employees participate in voting for NPF projects in proportion to the number of tokens
- NPFs take part in voting in the conduct of pension reform according to the number of tokens
- Commission to the participants of mining for the maintenance of infrastructure instead of banks commissions
- Avoiding the risk of bank failures and loss of pension savings (fiat funds in Central Bank, cryptosystem in the ecosystem, the exchange is token, the token gives the right to receive fiat)

The proposed remote identification mechanism based on blockchain technology



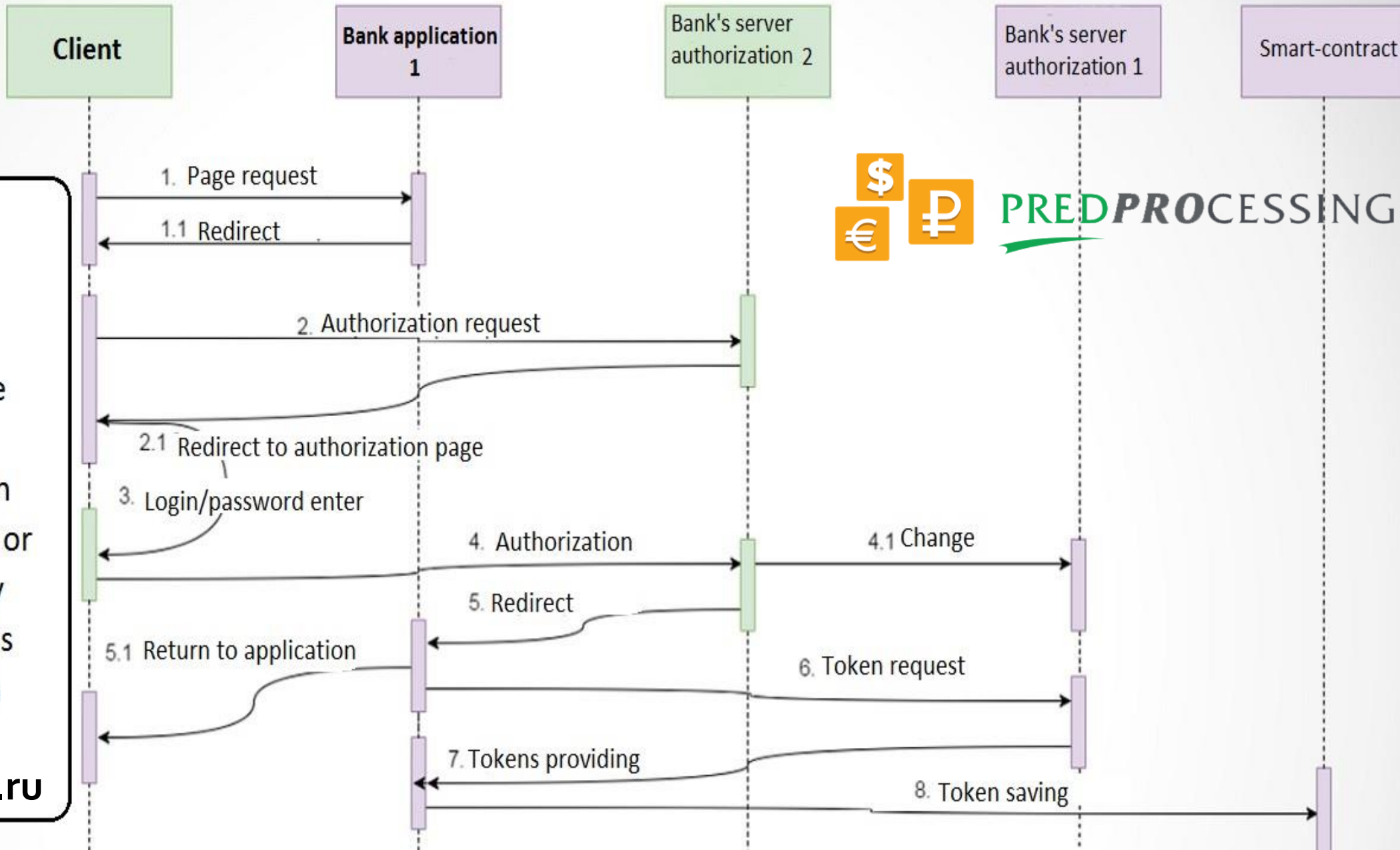
A hash function is an algorithm that converts a string of arbitrary length (message) into a bit string of a fixed length called a hash code, a check sum or a digital fingerprint

Token is a unique within the consortium Client's key

Remote authentication by 115-Φ3 - interoperability

Interoperability is the ability of a product or system whose interfaces are completely open, interact and function with other products or systems without any restrictions on access and implementation

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- **1. Who, by the legal point of view and on what grounds is responsible for the reliability of information stored in the "chain of blocks"?**

Blockchain is only a mapping of the current state of information flows in the system and is responsible for the historical unchanged information. Blockchain is just a distributed decentralized database and it can not verify the reliability of the information. The information providers are responsible for the reliability of the information.

- **2. Will the court accept as evidence the data certified with blockchain technology?**

Since there is no concept of blockchain in the Russian legal field, the court will not be able to consider the legality of constructing the evidence base of any case on the basis of consideration of extracts from blockchain. In blockchain the reliability of the state of information in database is the consensus of all parties. Any transaction signed by blockchain is not recognized by the court. However, there are 63Ф3 about EDS it makes sense to sign the legally meaningful actions with EDS.

- **3. What is the requirement to personal data disclosure contained in the system ensured if the information is distributed among many nodes?**

It is possible to provide the demarcation of access rights so that system user will only see what has to do with him.

- **4. What is the better way to connect new entrants to the system (NPFs, employers)**

We see that there will be some application for all popular mobile devices + PC software + web interface + module on the public services and online registration form.

- **5. Is a mixed system of participation possible (one part of the APF uses blockchain and other part don't)?**

No. Blockchain is a distributed database in which the consensus of all participants of the system is needed. If everyone accepts the blockchain and agrees with the reliability of the data then it works, otherwise - not.

- **6. How much it cost to implement a blockchain system for the whole system?**

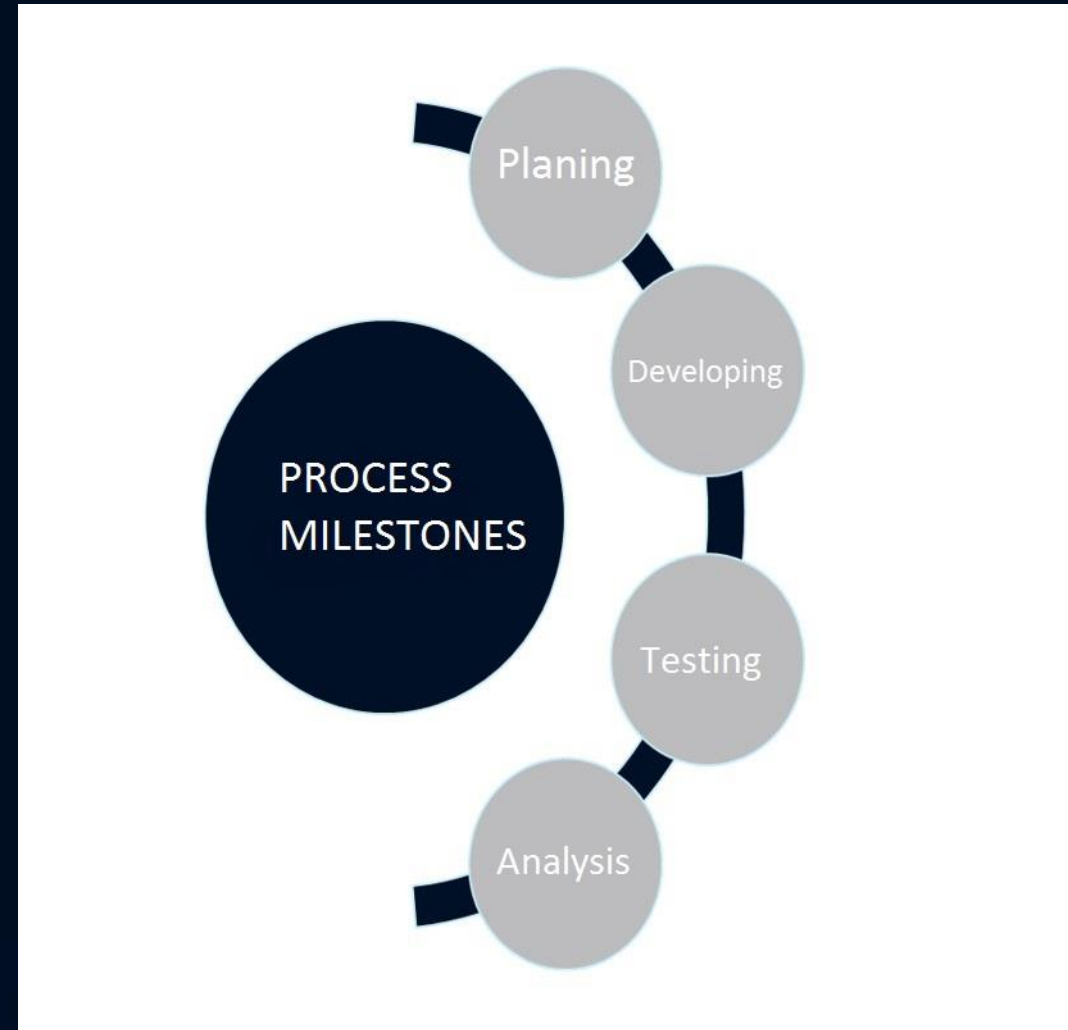
It is necessary to find out the process of the dialogue with all stakeholders of the implemented system, provide a series of consultations, make TI, and work out the estimate.

- **7. Does the use of blockchain technology needs any licensing requirements (for example, using of EDS special software licensed by developer is required)?**

The technology itself is open, on its basis both private and open blockchains are implemented. The developers of blockchain applications are not licensed, but in case of NPF it is planned to use blockchain technology with the inclusion of digital signatures for signing significant documents, the EDS itself will be certified accordingly.

- **7. What is the preferred procedure for financing the development, implementation and operation of a system built on this technology?**

We propose to hold a number of consultations with NPFs representatives, study their document circulation, current problems and tasks, develop TI and implement a pilot project on example of two NPFs and undergo the entire procedure. Test it, make the necessary adjustments and then scale it to the entire industry.



Thanks for your
attention!

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Let's discuss & find solutions