# Review of the existing information system of the Ministry of Finance of the Republic of Belarus (ASFR)

## Issues covered in the presentation

1. History of ASFR.
2. ASFR content and functionality.
3. ASFR structure.
4. Budget planning.
5. Budget execution and reporting.
6. Public Debt.
7. Interoperation with banks. Interoperation with ERIP.
8. Information security (regulatory framework and security elements).
9. ASFR technical architecture.
10. ASFR challenges.
11. ASFR modernization.
12. Data center and analytical reporting system.
13. Services delivered to the MoF by the Data-Processing Center.
14. Advanced training.
15. Conclusions.

## History of ASFR

**1993** – ASFR established (TSA opened at the National Bank, budget revenues accumulated at TSA);

**1997** – automation of budget planning, development of the budget applications package;

**1999** – automation of republican budget execution through the Treasury Territorial (TT) units;

**2001** – execution of the oblast budgets through the Treasury System;

**2006** – execution of the primary level budgets through the Treasury System;

**2005** – further ASFR development; automation of republican budget revenue accounting;

**2005–2006** – launching of the Republican Data Transmission Network of the Ministry of Finance of the Republic of Belarus into full time operation

**2009** – commissioning "Client of the Territorial Treasury" software into operation;

**2012** – commissioning "Reporting Module" software package into operation.

3

## Missions of the MoF

✓ Implementation of a common fiscal policy and coordination of other republican government agencies activities in relation to financial sphere.

✓ Developing proposals on ensuring growth of financial resources, improving fiscal relations between citizens and the government, as well as utilization of borrowed resources.

✓ Efficient implementation of fiscal policies.

✓ Management of domestic and foreign public debt of the Republic of Belarus, borrowing and servicing of external public loans comprising the external debt of the Republic of Belarus.

✓ Insurance government regulation.
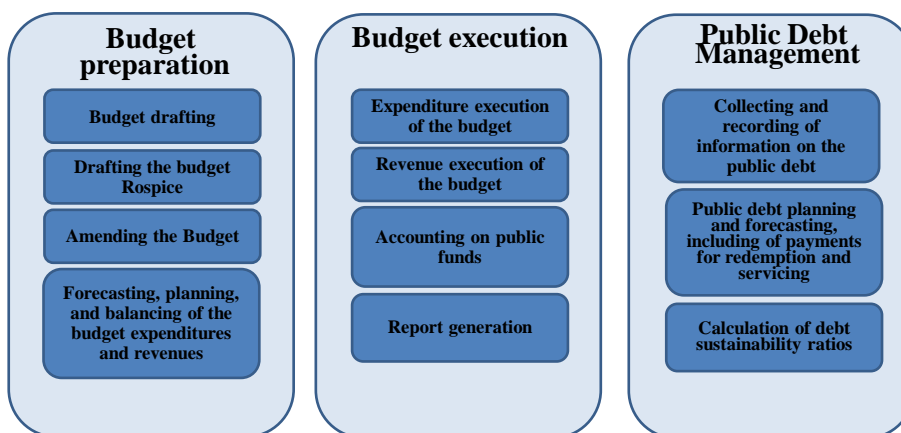
✓ Accounting and reporting government regulation.

4

# ASFR Functions:

1) automation of the following elements of the budget process:
- ✓ drafting the budgets at all levels;
- ✓ execution of the budgets at all levels;
- ✓ interaction of Financial Departments and Treasury Units with other participants of the budget process (budget funds administrators and revenue collection agencies), as well as inspection agencies;
- ✓ insurance and audit management;
- ✓ record keeping of public securities ;

2) exercising control over the earmarked use of the budgets resources by entities of the general government sector;

3) analysis of the economy, sector finances as well as finances of administrative-territorial units;

4) support to functioning of the MoF, its territorial agencies, and Financial Departments at subnational level, including ones not directly related to the budget process.

# Basic Elements of ASFR

| Budget preparation | Budget execution | Public Debt Management |
|---|---|---|
| Budget drafting | Expenditure execution of the budget | Collecting and recording of information on the public debt |
| Drafting the budget Rospice | Revenue execution of the budget | Public debt planning and forecasting, including of payments for redemption and servicing |
| Amending the Budget | Accounting on public funds | Calculation of debt sustainability ratios |
| Forecasting, planning, and balancing of the budget expenditures and revenues | Report generation | |

## ASFR Subsystems and Software Packages

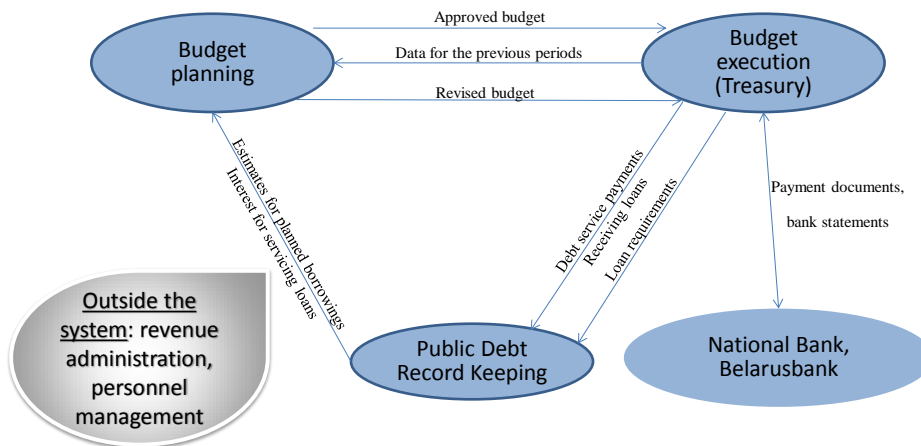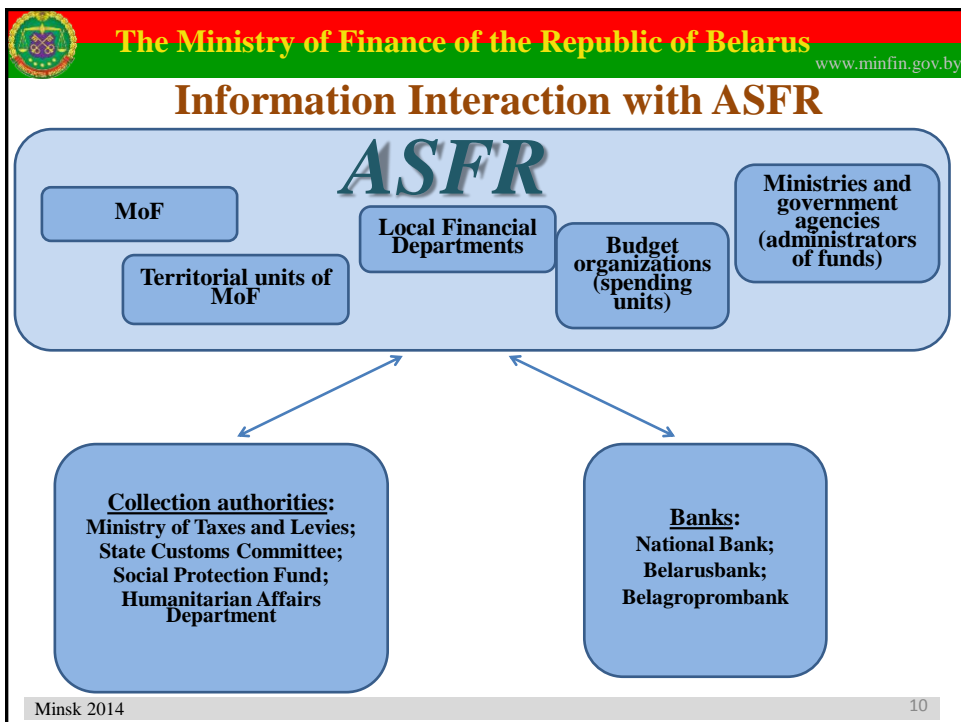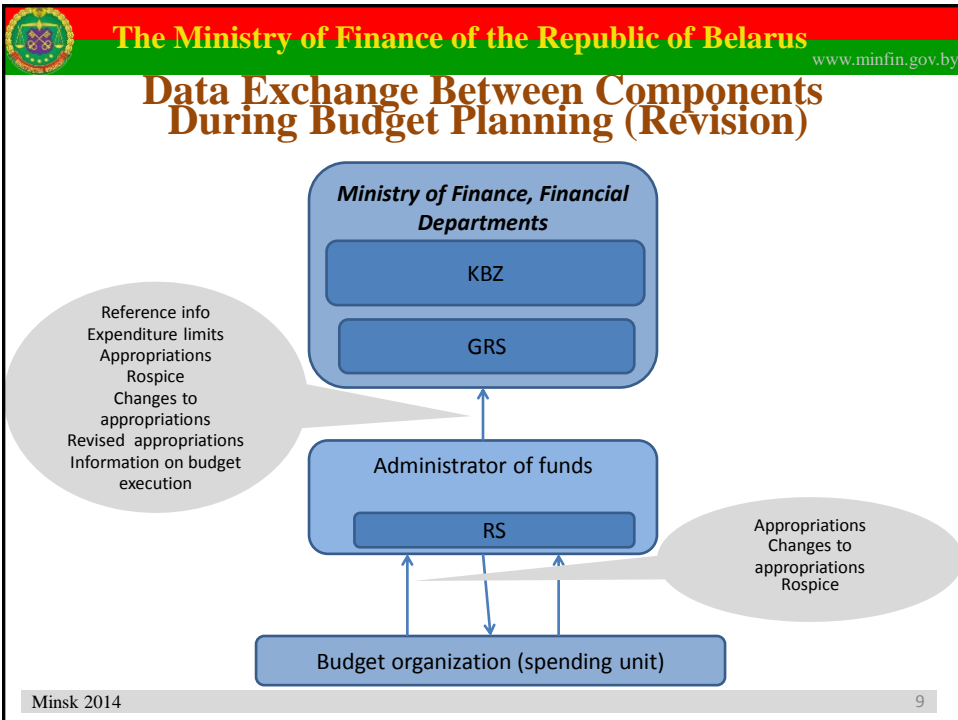| **Budget planning** | **Budget execution and reporting** | **Public Debt Management** |
|---|---|---|
| *There are 2 software products in use.* | *There are 16 software products in use.* Main ones: | *There are 5 software products in use.* Main ones: |
| • Software package for the republican and local budgets (KBZ) <br><br>• Software package "Main administrator of funds — administrator of funds)" (GRS-RS) | • Software package "Execution of the republican and local budgets" <br><br>• "Client of the Territorial Treasury" software <br><br>• "Accounting and Reporting" software <br><br>• "AIS GK" program package - part related to the republican budget revenue execution | • "External debt record keeping, control, and analysis" software package <br><br>• "Public debt record keeping" software package |

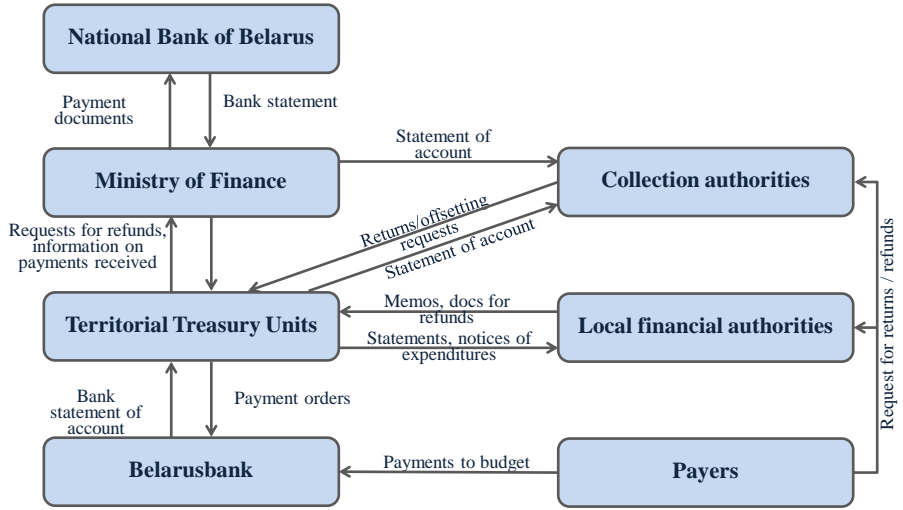## ASFR through the World Bank Reference Model

## Data Exchange Between Components During Budget Planning (Revision)

**Ministry of Finance, Financial Departments**

KBZ

GRS

Reference info
Expenditure limits
Appropriations
Rospice
Changes to appropriations
Revised appropriations
Information on budget execution

Administrator of funds

RS

Appropriations
Changes to appropriations
Rospice

Budget organization (spending unit)

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9

## Information Interaction with ASFR

**ASFR**

MoF

Territorial units of MoF

Local Financial Departments

Budget organizations (spending units)

Ministries and government agencies (administrators of funds)

**Collection authorities:**
Ministry of Taxes and Levies;
State Customs Committee;
Social Protection Fund;
Humanitarian Affairs Department

**Banks:**
National Bank;
Belarusbank;
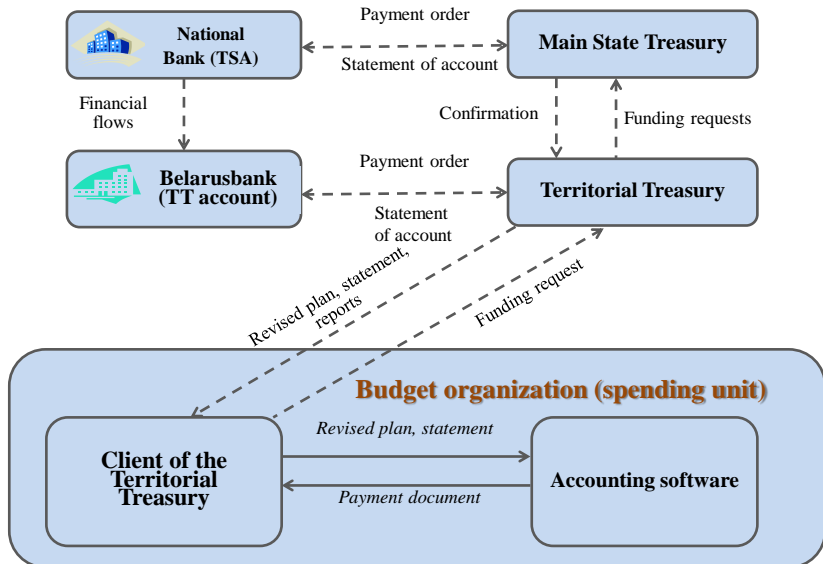Belagroprombank

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10

5

# Budget Execution - Revenues

# Budget Execution - Expenditures

## Interoperation with Banks

**ASFR**

MoF, Main State Treasury

VPN, Dial-up

Treasury network

Territorial Treasury Units

Budget organizations (spending units)

National Bank

TSA

Bank system network

Transfer of funds to the accounts of the main directorates

Supplier's bank #1

Supplier's bank #X

Transfer of funds to the supplier's account

Supplier #1

Supplier #X

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13

## Interoperation with ERIP

Payer #1

Payer #X
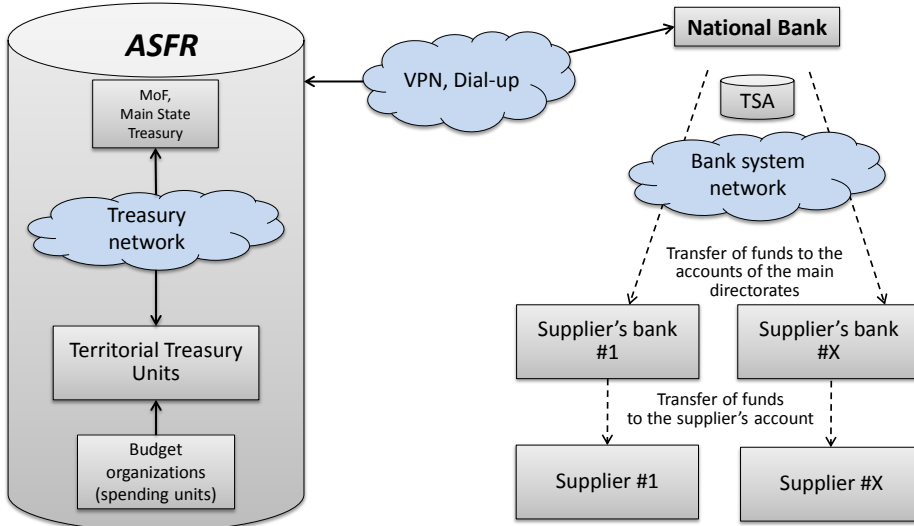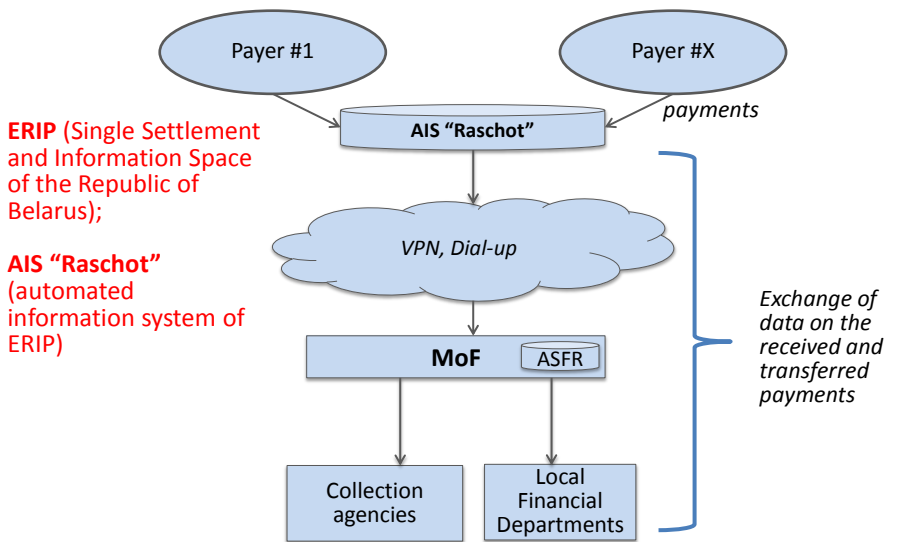
payments

**ERIP** (Single Settlement and Information Space of the Republic of Belarus);

AIS "Raschot"

**AIS "Raschot"** (automated information system of ERIP)

VPN, Dial-up

**MoF** ASFR

Collection agencies

Local Financial Departments

*Exchange of data on the received and transferred payments*

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14

7

# Information Security Management Process

| MOF | | MOF |
|---|---|---|

Development of SMIB *(Information Security Management System)*

Implementation

Planning

SMIB implementation and operation

SMIB maintenance and improvement

Inspection

SMIB monitoring and analysis

Action

Requirements and expected results in the field of information security

Controlled information security system

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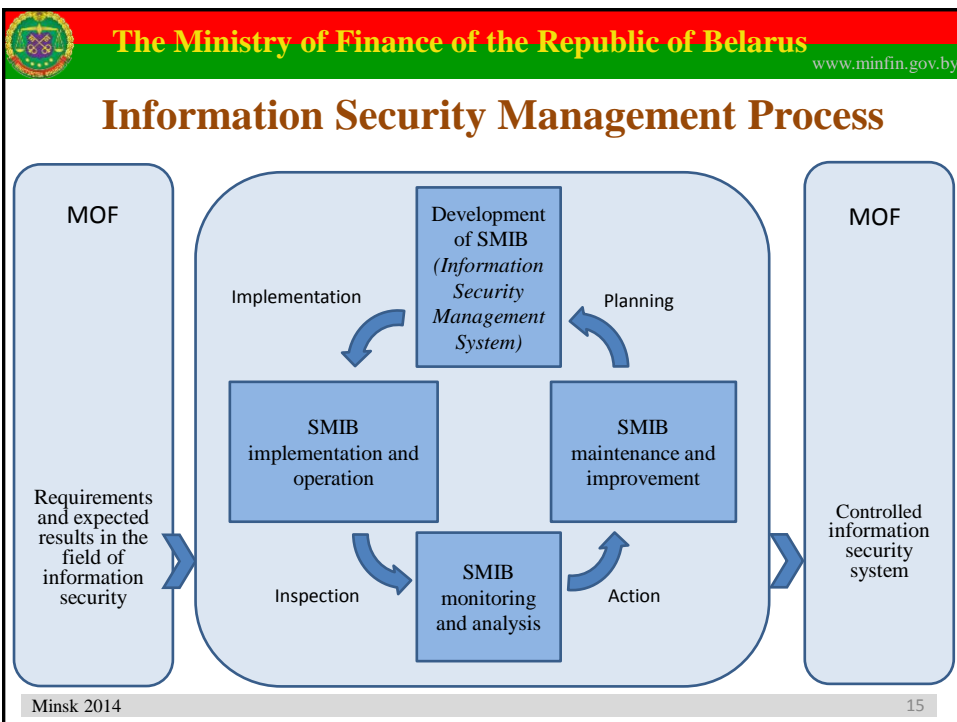
# Ensuring Information Security

**Regulatory framework:**
- Law of the Republic of Belarus #455-z dated November 10, 2008: "On information, informatization, information security"
- Law of the Republic of Belarus #113-z dated December 28, 2009: "On the electronic document and electronic digital signature"
- Decree #196 of the President of the Republic of Belarus dated April 16, 2013: "On some measures to improve information security"
- Decree #486 of the President of the Republic of Belarus dated October 25, 2011: "On certain measures to ensure the security of critically important informatization sites"
- Decree #60 of the President of the Republic of Belarus dated February 1, 2010: "On measures for improving the use of the national segment of the Internet"
- Order #62 of the Operative Analytical Center under the President of the Republic of Belarus dated August 30, 2013: "On some issues of technical and cryptographic information security"

**Organizational activities:**
- Enforcement of the information security instruments
- Division of information resources
- Establishment of the certification center, registration centers, and application of electronic documents
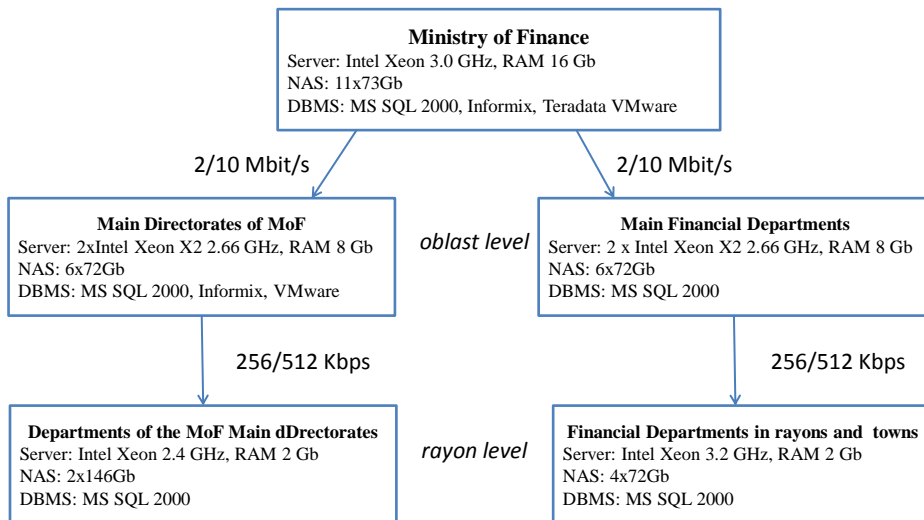- Periodic inspections

**Software and hardware activities:**
- Antiviral software (Kaspersky Endpoint Security 10)
- Internet proxy server (Kerio 7.4)
- Firewall (FortiGate 110 c)
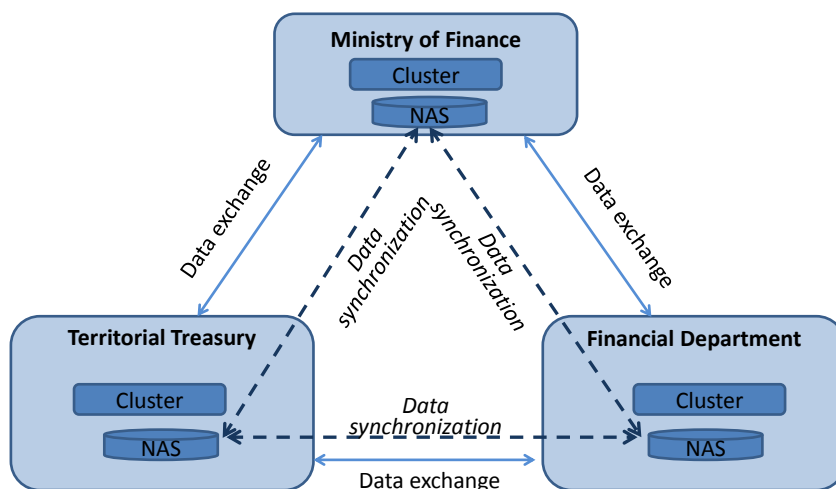- Application of electronic digital signature

# ASFR Technical Architecture

**Ministry of Finance**
Server: Intel Xeon 3.0 GHz, RAM 16 Gb
NAS: 11x73Gb
DBMS: MS SQL 2000, Informix, Teradata VMware

2/10 Mbit/s                    2/10 Mbit/s

**Main Directorates of MoF**
Server: 2xIntel Xeon X2 2.66 GHz, RAM 8 Gb
NAS: 6x72Gb
DBMS: MS SQL 2000, Informix, VMware

*oblast level*

**Main Financial Departments**
Server: 2 x Intel Xeon X2 2.66 GHz, RAM 8 Gb
NAS: 6x72Gb
DBMS: MS SQL 2000

256/512 Kbps                    256/512 Kbps

**Departments of the MoF Main dDrectorates**
Server: Intel Xeon 2.4 GHz, RAM 2 Gb
NAS: 2x146Gb
DBMS: MS SQL 2000

*rayon level*

**Financial Departments in rayons and towns**
Server: Intel Xeon 3.2 GHz, RAM 2 Gb
NAS: 4x72Gb
DBMS: MS SQL 2000

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# Geographically-Distributed Computing Complex

**Ministry of Finance**
Cluster
NAS

Data exchange          Data synchronization   Data synchronization          Data exchange

**Territorial Treasury**
Cluster
NAS

*Data synchronization*

**Financial Department**
Cluster
NAS

Data exchange

*Note:*
Applied software (SW): Accelops, Ridgeline 4.0, FortiManager, VMware vSphere 5, StarWind Enterprise

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9

## ASFR Challenges

- Decentralized (by budget types) multi-tier system structure.
- Geographical distribution of the databases.
- A big number of software products deployed through different development approaches (*ASFR comprises 43 software products*).
- Lack of comprehensive operative (on-line) information on execution of the budgets.
- Variety of database management systems and programming languages.
- Use of obsolete technologies.

## Approaches to MoF Information System Modernization
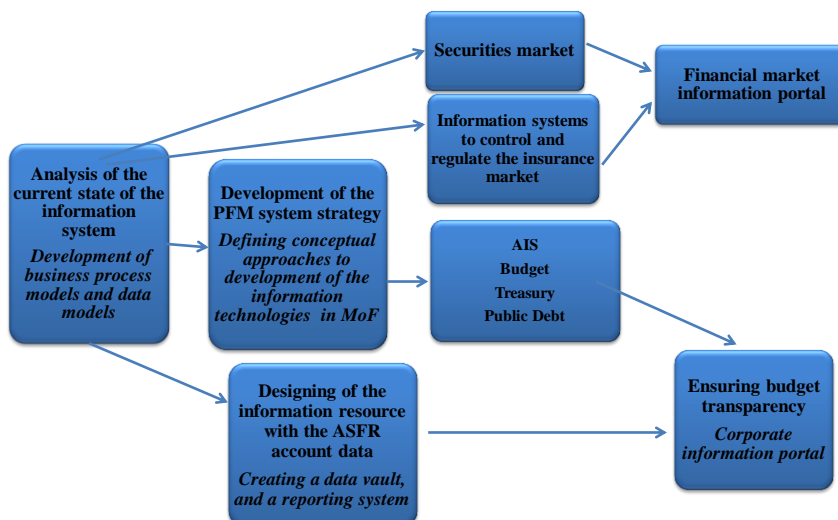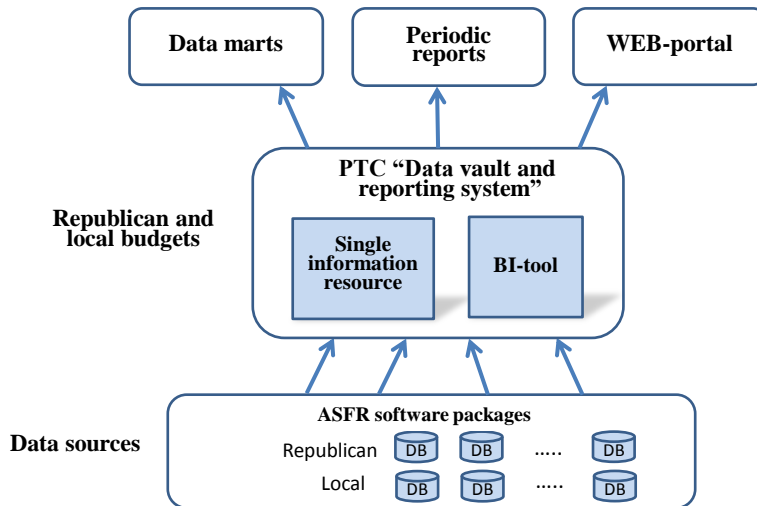
## Main Goals of ASFR Modernization

To establish a single integrated public finance management system

To apply standardized software and hardware solutions

To optimize public finance management functional processes

To maximize electronic document utilization

To apply the state-of-the-art technologies of data processing and information access

To strengthen the MoF Data –Processing Center as the focal point to deliver software development, data processing, and data storage services
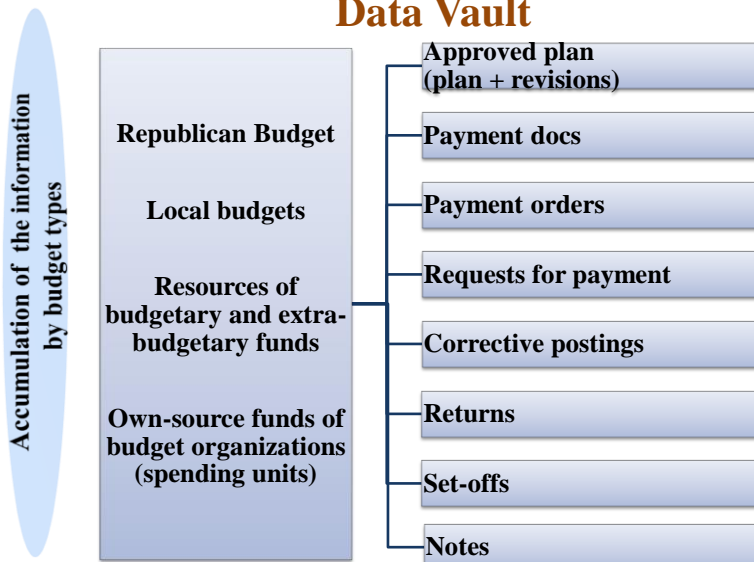
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21

## ASFR Modernization Results

Efficient and operative public finance management

Optimized functional processes of MoF and its units

Creation of the documented information resource on execution of the state budget

Manageability and flexibility of the automated system

High reliability, fault tolerance, and security of the system

Reduced operating costs related to system operation, maintenance, and development

Integrated approach to strategic development of the public finance management system

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# Data Vault and Analytical Reporting System

Data marts

Periodic reports

WEB-portal

Republican and local budgets

PTC "Data vault and reporting system"

Single information resource

BI-tool

Data sources

ASFR software packages

Republican    DB    DB    .....    DB

Local    DB    DB    .....    DB

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23

# Management of Account Data Storage for the Data Vault

Accumulation of the information by budget types

Republican Budget

Local budgets

Resources of budgetary and extra-budgetary funds

Own-source funds of budget organizations (spending units)

Approved plan (plan + revisions)

Payment docs

Payment orders

Requests for payment

Corrective postings

Returns

Set-offs

Notes

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24

## Services Delivered to the MoF by the Data-Processing Center

| 80 specialists | • Software development<br>• Software maintenance |
| --- | --- |
| 20 specialists | • System administration and maintenance |
| 5 specialists | • Information security |
| 150 specialists | • Regional representatives |

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25

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## Qualification Upgrade

*State Educational Institution "Center of Upgrade of Qualification for Managers and Staff of the Ministry of Finance of the Republic of Belarus"*

Objective:
- to upgrade qualifications, to enhance and deepen professional knowledge and skills in finance, tax policy, information technologies, insurance;
- to prepare for taking qualification exams in the field of audit, government regulation of the securities market, the international financial reporting standards;
- to improve professional competencies of the experts.

Specialists of the following agencies are trained:
- central apparatus (HQ) of the Ministry of Finance;
- territorial units of the Ministry of Finance and local financial departments;
- securities and insurance companies;
- auditors, and specialists of economic and accounting departments of any entities of any property title;
- inspection and audit departments in line ministries

Lectures:
- leading national and international experts;
- most experienced university lectures;
- experts from government agencies and other organizations involved in qualification upgrade and advanced training programs.

*Note:*
- *there are 15 classrooms;*
- *about 350 people get training annually;*
- *there are 230 study groups in 2014.*

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26

# Thank you for attention

## _Glossary:_

AIS – Automated information system;

AIS GK  – Automated information system of the State Treasury;

ASFR – Automated system of financial settlements of the Ministry of Finance;

DB – database;

Belarusbank – Belarusbank Open Joint-Stock Company;

Belagroprombank – Belagroprombank Open Joint-Stock Company;

GRS – main administrator of budget  funds;

TSA –  Treasury Single Account;

KZ (ST) – set of tasks;

PTC – software and hardware complex;

RS  – administrator of budget  funds;

SMIB – Information Security Management System;

PFM – public financial management;

NAS – network attached storage;

TT – Territorial Treasury