MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

Digital System for Signature Verification and Document Management

Project Documentation Overview

PROJECT OVERVIEW

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What is this project?

A BACKEND SYSTEM DESIGNED TO STREAMLINE DOCUMENT MANAGEMENT BY ENABLING THE ADDITION, STORAGE, SEARCH, AND AUTOMATIC ANALYSIS OF SIGNATURES ON OFFICIAL DOCUMENTS.

- **Core Functionality:** End-to-end automation of the signature verification lifecycle
- **Innovation:** Integration of state-of-the-art technologies for reliable verification
- **Smartness:** Leveraging advanced AI models trained on extensive signature datasets

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KEY PROJECT OBJECTIVES

1. Automate the manual and time-consuming process of signature verification.
2. Secure, centralized storage and fast retrieval of all documents.
3. Support administrative staff with a simple and powerful tool.
4. Scalability to handle a large volume of documents and images.
5. Introduce a comprehensive audit trail with versioning and change logging.

BENEFITS FOR THE ORGANIZATION

ASPECT	ADVANTAGE
Efficiency	Up to 80% faster document processing by eliminating manual checks and the executor's subjective assessment of whether the signature on the document is valid or not.
Security	High-reliability signature validation based on advanced AI models.
Transparency	All data, actions, and changes are logged with detailed metadata, creating a clear audit trail.
Cost Savings	Fewer human errors, lower operational costs, and reduced need for printing.

THE CURRENT CHALLENGES

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The existing process for signature verification is plagued by several critical issues:

MANUAL PROCESS

IT IS ENTIRELY MANUAL, MAKING IT SLOW, TEDIOUS, AND HIGHLY PRONE TO HUMAN ERROR.

LOW RELIABILITY

VERIFICATION IS LESS RELIABLE, ESPECIALLY WHEN DEALING WITH LOW-QUALITY DIGITAL IMAGES OR PHOTOCOPIES.

POOR SCALABILITY

THE PROCESS IS DIFFICULT TO SCALE WHEN THE VOLUME OF DOCUMENTS INCREASES, CREATING SIGNIFICANT BOTTLENECKS.

New system is designed to solve these problems directly.

TECHNICAL REQUIREMENTS

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1. High-performance GPU servers

Enable parallel processing and execution of AI models, with the option to add additional GPU units as the number of users increases.

2. Devices specialized for scanning documents with a high-quality camera

Provide clear and precise signature images, which is essential for verification accuracy.

3. Fast and secure data storage

SSD/HDD for active processes, with a centralized archive.

4. Network and security infrastructure

Stable connections, protective layers, and a performance monitoring system.

5. System scalability

Achieved by adding new GPU/CPU nodes and service instances, balancing traffic, and replicating the database.

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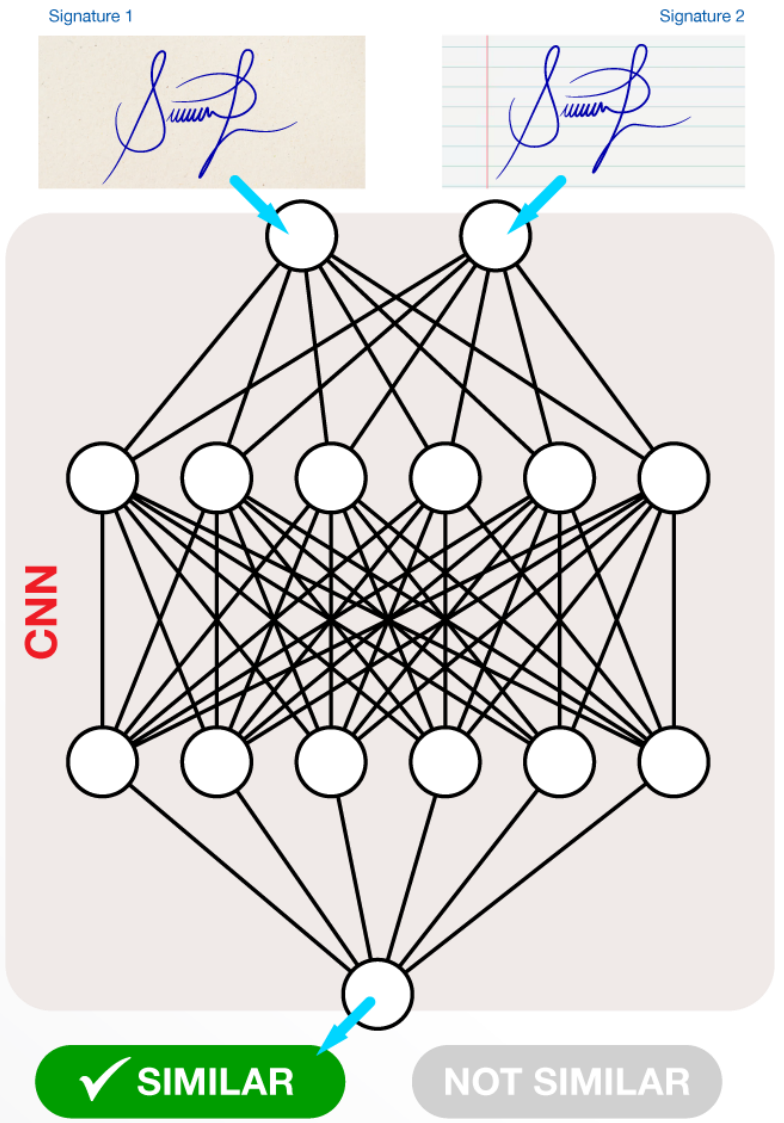
HOW THE AI WORKS: SIGNATURE EMBEDDING

WE TRANSFORM EACH SIGNATURE IMAGE INTO A UNIQUE MATHEMATICAL REPRESENTATION CALLED AN "EMBEDDING".

1. A signature image is fed into a pre-trained Convolutional Neural Network (CNN)
2. The network processes the image to extract its key visual features (curves, angles, pressure points)
3. The output is a dense vector (e.g., a list of 512 numbers) that numerically represents the signature
4. This embedding captures the essence of the signature, ignoring irrelevant noise.
5. **Euclidean and Cosine** distances are used to calculate similarity scores.



KEY FEATURES

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1. End-to-end automation of the signature verification process
2. AI-powered verification using CNN-based signature embeddings & similarity scoring
3. Automatic signature cropping from scanned documents
4. Centralized signature database with profile updates & recalculated embeddings
5. Full administrative control: search, filter, and secure deactivation (when there is a change of signers on documents)
6. High efficiency & accuracy with complete trace for audit needs and scalability

VERIFICATION FLOW DIAGRAM

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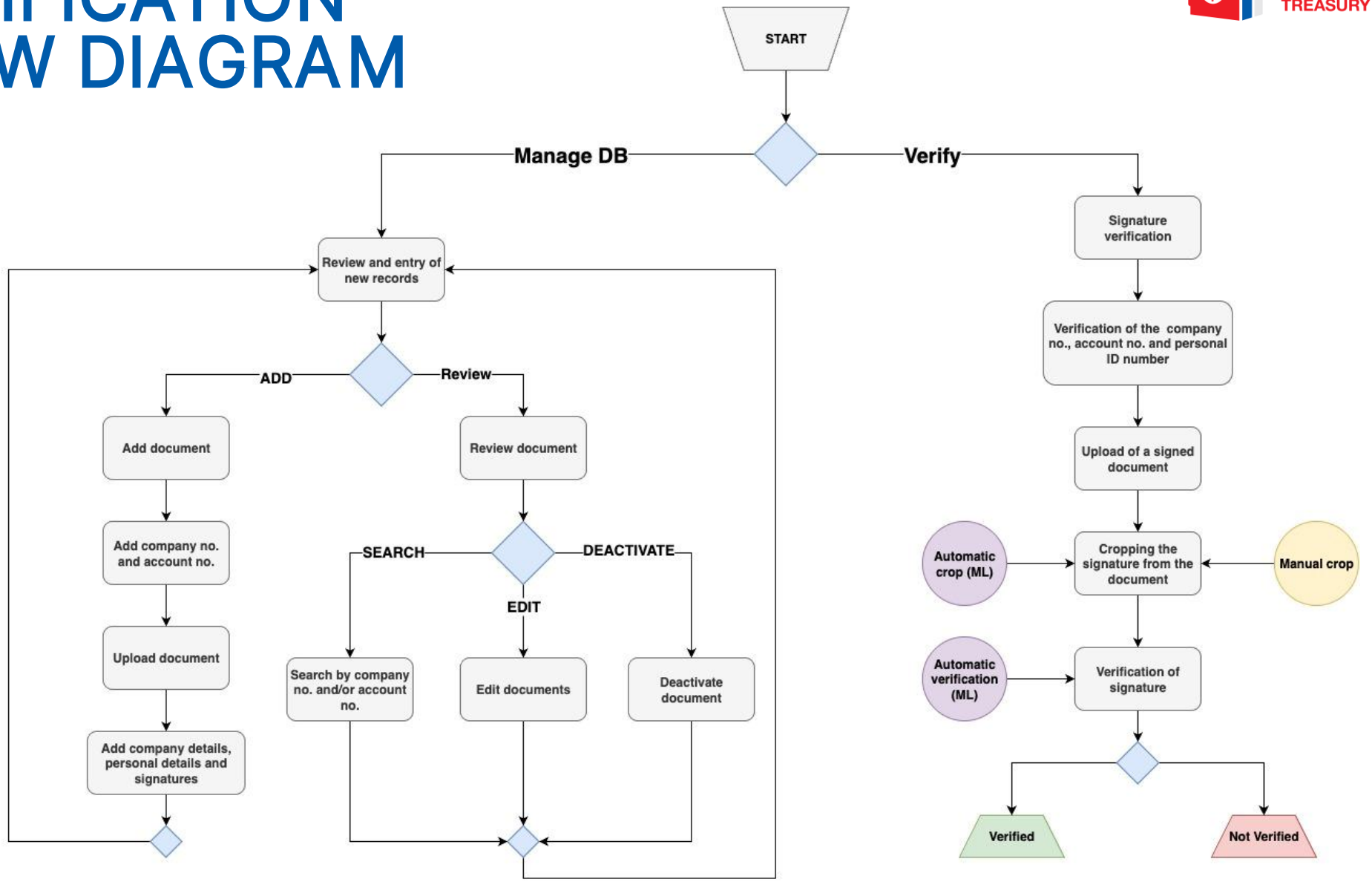

ADDING A SIGNATURE TO THE DATABASE

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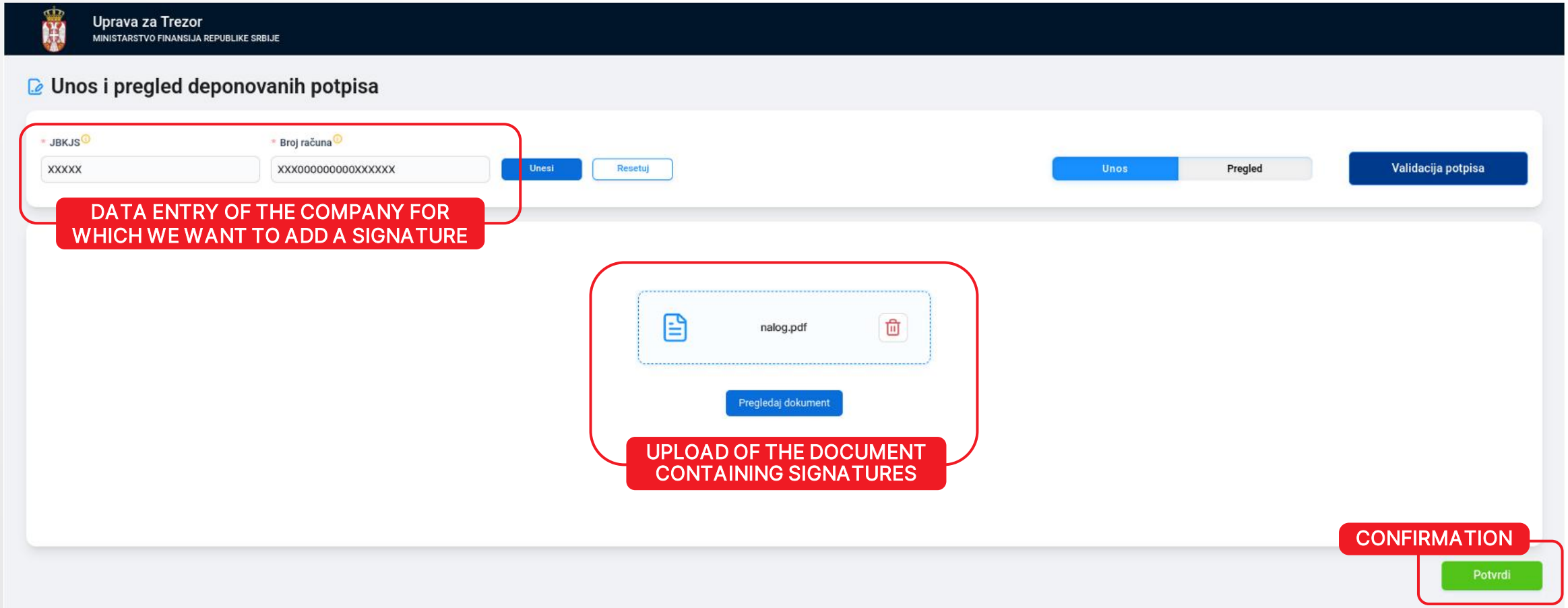
PURPOSE

TO BUILD THE REFERENCE DATABASE OF SIGNATURES. IF THE PERSON ALREADY EXISTS, THIS NEW SIGNATURE IS ADDED TO THEIR PROFILE, AND THE AVERAGE EMBEDDING IS RECALCULATED FOR BETTER ACCURACY.



AUTOMATIC SIGNATURE CROPPING

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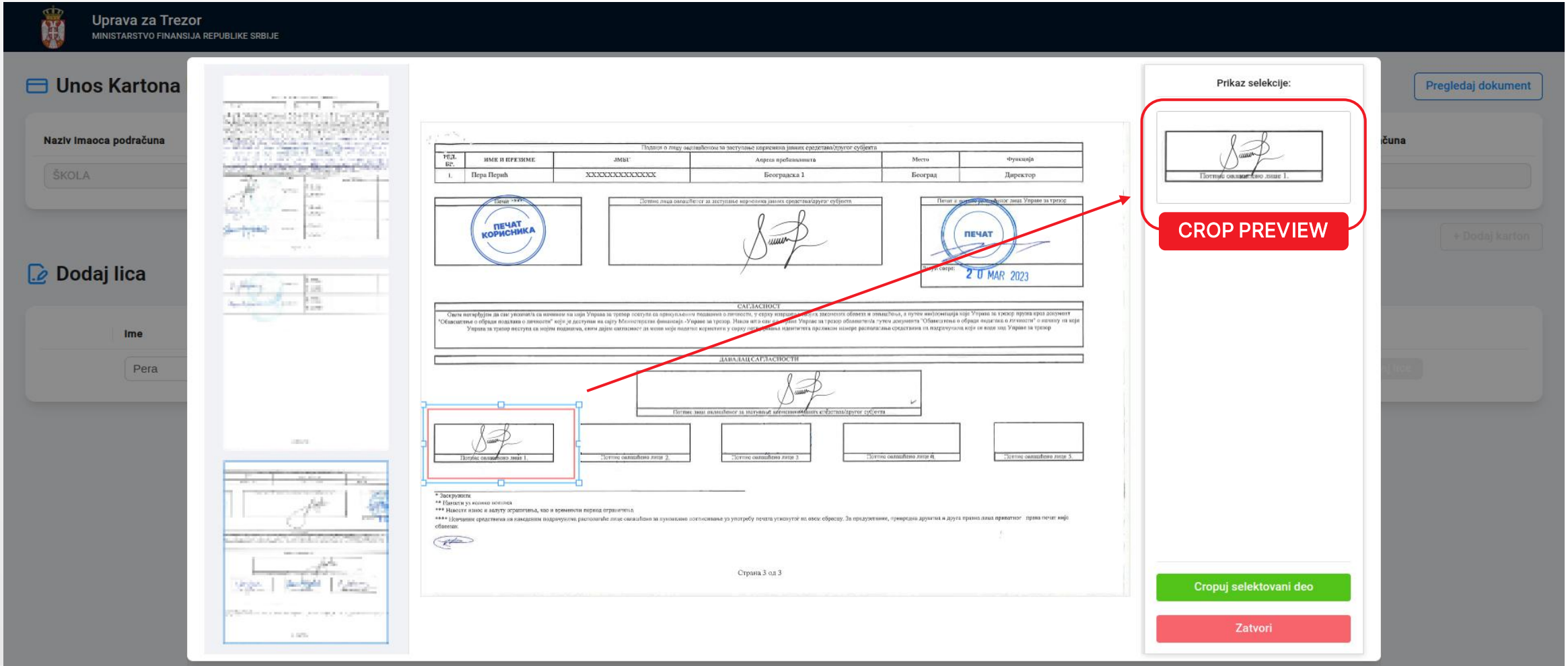
PURPOSE

AUTOMATICALLY DETECTS AND ISOLATES A SIGNATURE FROM A LARGER DOCUMENT IMAGE, PREPARING IT FOR VERIFICATION OR STORAGE.



VERIFYING A SIGNATURE

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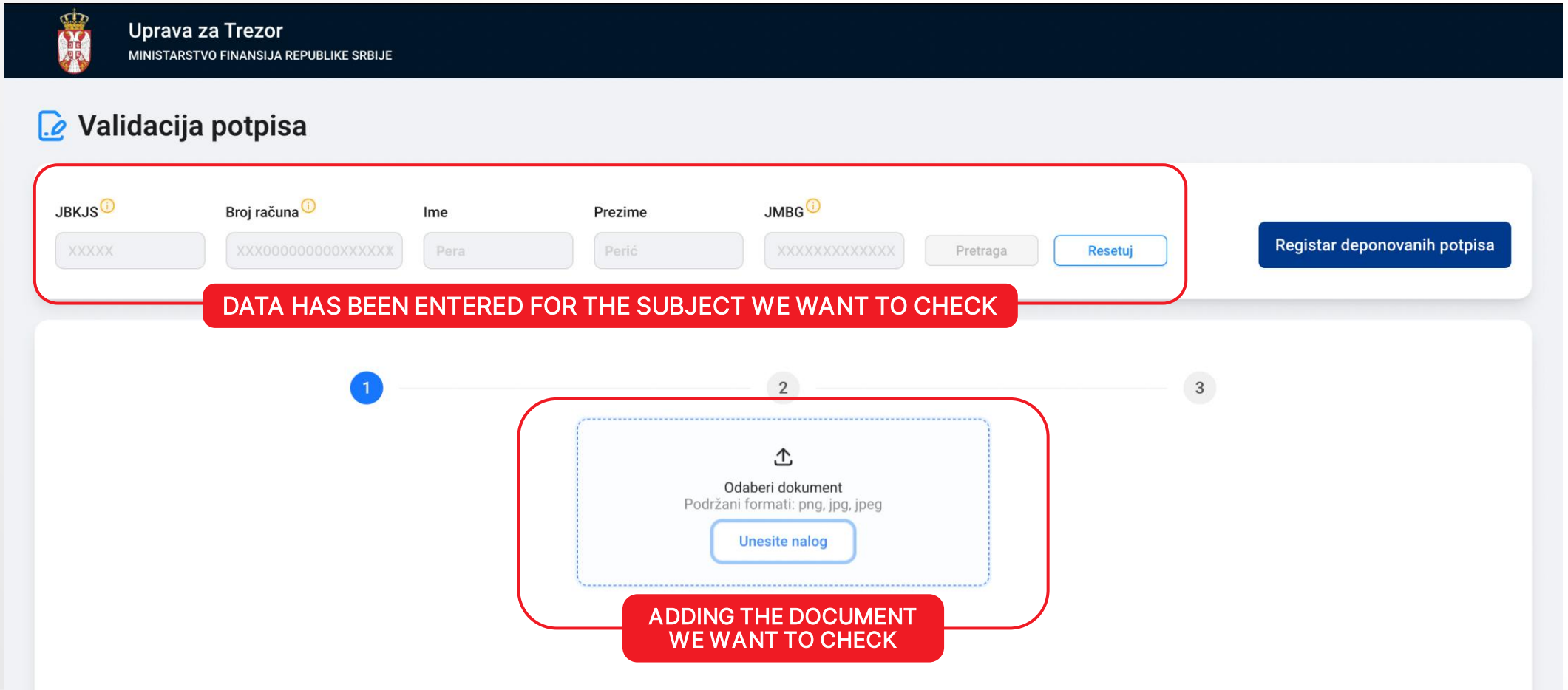
PURPOSE

THE CORE AI FUNCTION. IT COMPARES A NEW SIGNATURE IMAGE AGAINST THE EXISTING DATABASE FOR A SPECIFIC PERSON AND RETURNS A VERDICT.



VERIFYING A SIGNATURE

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Uprava za Trezor
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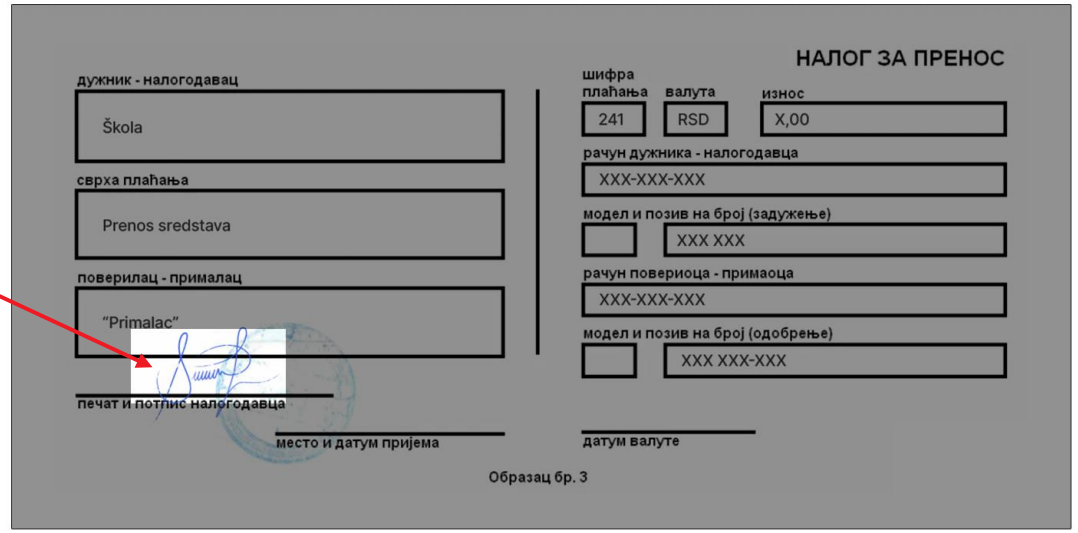
Validacija potpisa

✓ — 2 — 3

SIGNATURE LOCATED

Potpis sa naloga

Pronađи potpis ručno



VERIFYING A SIGNATURE

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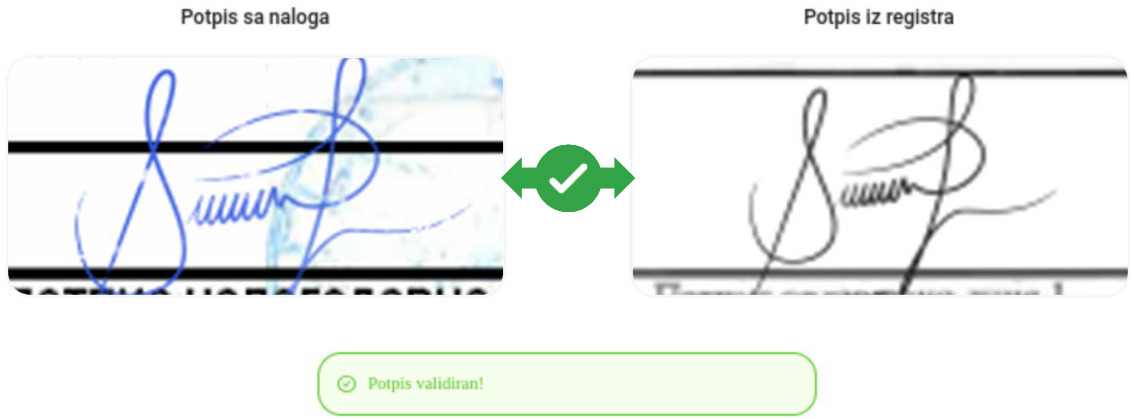

Figure: Real signature (overlap >92%)

Figure: Fake signature

MANAGING DATA: SEARCH AND DEACTIVATION

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Full administrative control is provided through dedicated UI.

Search Documents: Allows paginated and filtered searches based on any metadata.

Search Signatures: Finds all stored signatures for a given person and Company No.

Deactivation of documents with invalid data: Securely deactivates documents or signatures as needed.

SCANNING OF DOCUMENTS

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1. **Scan**
   the document

2. **Submit**
   for the approval

3. **Verification**
   of the document

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SUMMARY OF ADVANTAGES

This system transforms a slow, unreliable process into a modern, automated workflow.

- Efficiency: Drastically reduces document processing time.
- Accuracy: AI-driven verification minimizes human error (subjective assessments).
- Transparency: Complete audit trail for every action.
- Scalability: The system is adapted to the future growth in data volume.

KEY SUCCESS METRICS

We will measure the project's success against these targets:

- Performance: < 2 seconds average response time per query.
- Reliability: No data loss or corruption during signature extraction.
- Quality: Complete test coverage (unit, integration, and end-to-end).

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Business Intelligence System (DWH, OBIEE)

Data transformation and adaptation
to business users' needs

DWH
Data Management System

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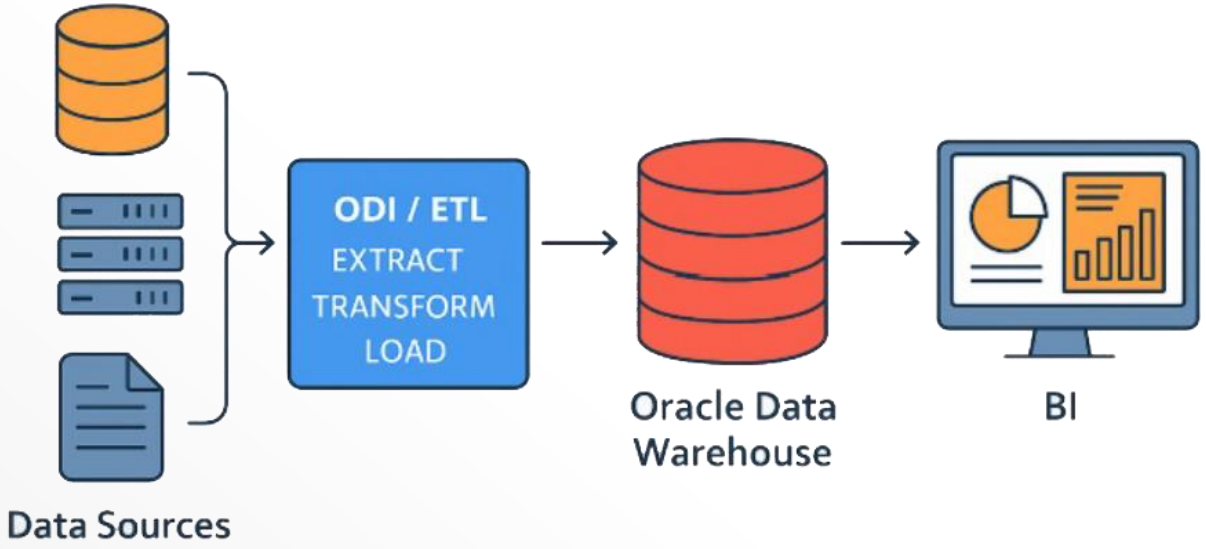
Benefits

- **Subject-oriented**
  Analyzing data about a particular subject or functional area
- **Integrated**
  Creating consistency among different data types from various sources
- **Nonvolatile**
  Stable data with constant access to necessary data
- **Time-variant**
  Data warehouse analysis looks at change over time



DATA INTEGRATOR

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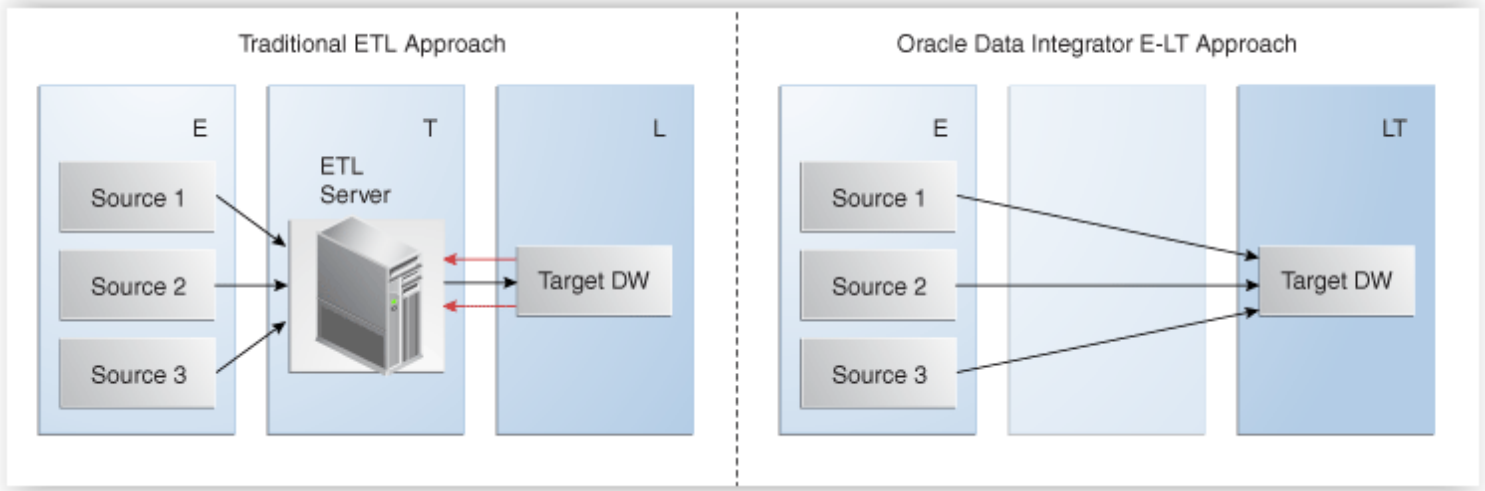
ETL Processes



- Data Integrator - A tool that combines elements of integration, synchronization, data quality, and data management
- Supports all styles of data integration: data-driven, event-driven, and service-based
- Capable of processing massive volumes of data in real time
- Ensures consistency and accuracy of data at all levels
- ODI operates in ELT mode (Extract – Load – Transform), where transformations are executed on the target database, resulting in significantly improved performance

BUSINESS INTELLIGENCE SYSTEM (OBIEE)

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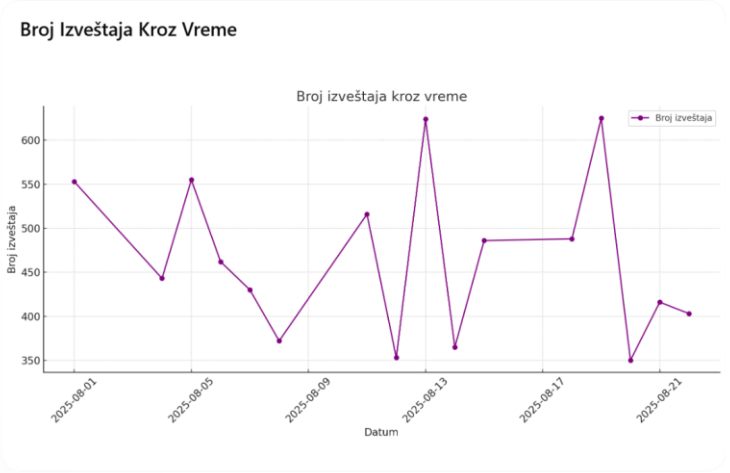
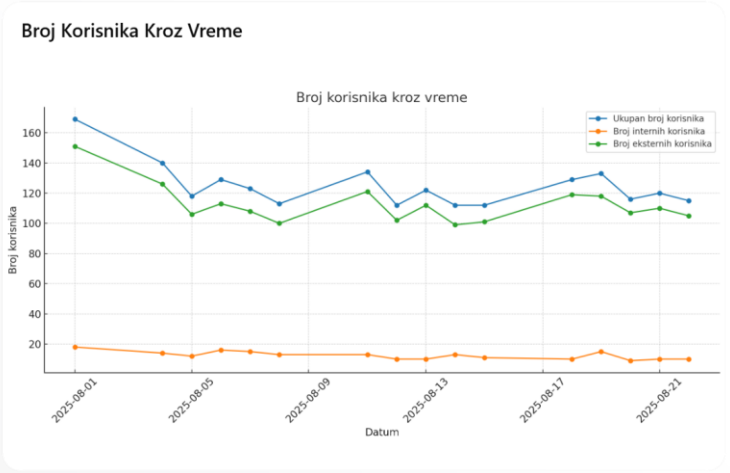
- Access to key information through dashboards and reports
- Interactive data analysis (drill-down, filtering, comparisons)
- Simple visualization (charts, tables)
- Support for strategic and operational decision-making
- Real-time reporting and monitoring
- Ad-hoc report creation by business users
- Unified BI platform – integration with multiple data sources





OBIEE - Reports

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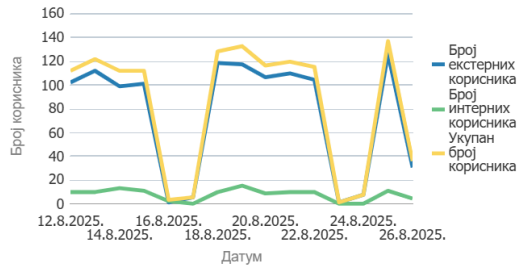
Subject Area	Production	Test	Development	Total
Izvršenje budžeta	31	13	0	44
Glavna knjiga	22	0	0	22
JAFIN	27	48	1	76
IT	16	2	0	18
Obradno-informacioni centar	5	0	0	5
Monitoring	3	0	0	3
Izvodi	6	0	0	6
JLS	15	8	0	23
CRF	25	0	0	25
ISPFI	0	2	0	2
Izveštaji u realnom vremenu	10	14	0	24
MMF	0	2	1	3
Upravljanje informatičkim dobrima	0	5	0	5
				256

- Number of reports by subject areas

- Usage Trackage
  - Enables users to track all reports being run and queries fired to the database

Datum	Укупан број корисника	Број интерних корисника	Број екстерних корисника	Број извештаја
26.8.2025.	36	5	31	70
25.8.2025.	137	11	126	513
24.8.2025.	8	0	8	71
23.8.2025.	1	0	1	8
22.8.2025.	115	10	105	403
21.8.2025.	120	10	110	416
20.8.2025.	116	9	107	350
19.8.2025.	133	15	118	625
18.8.2025.	129	10	119	488
17.8.2025.	6	0	6	47
16.8.2025.	3	2	1	4
15.8.2025.	112	11	101	486
14.8.2025.	112	13	99	365
13.8.2025.	122	10	112	624
12.8.2025.	112	10	102	353
Укупно	**1262**	**116**	**1146**	**4823**



OBIEE - Concept

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Three Layers

- Physical layer
  Contains data in the form as given on the DWH base
- Logical layer (Business Model and Mapping)
  Represents an intermediate layer between the physical and the presentation layer (report level)
- Presentation layer data
  Presented in the form used on reports

Tables are divided into two types:

- Dimensions: tables of descriptive attributes (dates, names, codes etc.)
- Facts: tables containing amounts, numbers etc.

OBIEE - Physical Layer

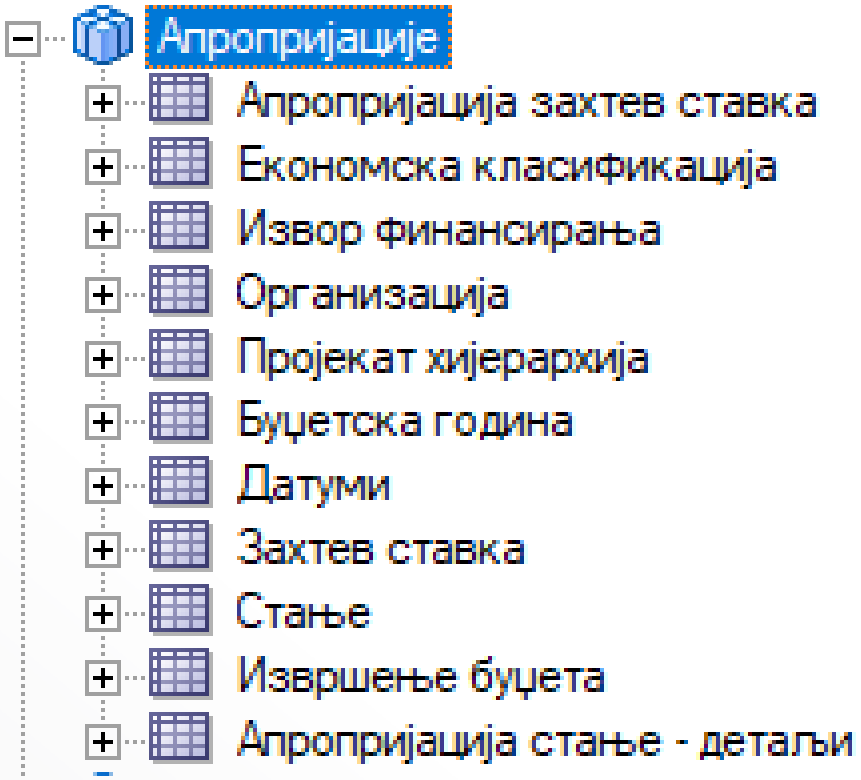
- At the physical layer, tables are linked according to the defined keys
- Tables are connected with the dimensions that are relevant for reporting

OBIEE - Logical Layer

- At the logical layer, data is modified
- Data from the physical layer (database) is prepared for presentation in the reporting layer
- Table names and structures have undergone changes

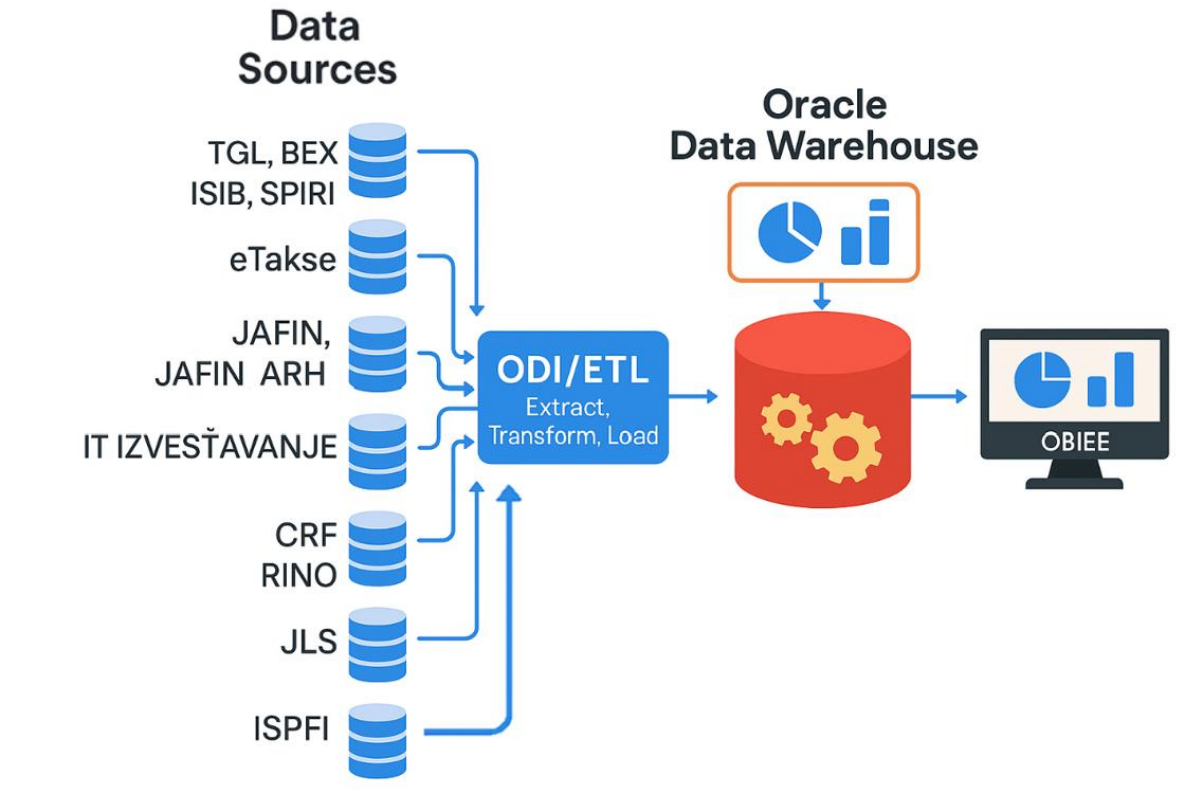
OBIEE
- Presentation Layer

- At the presentation layer, subject areas are defined
- Each subject area corresponds to one fact table
- Tables, in terms of structure, are aligned with reporting requirements



OBIEE - Sources

- Multiple data sources
- Applying different rules within the same reports
- Displaying all data from various sources in the same reports
- Linking different data sources to produce unified reports



OBIEE - Dashboard

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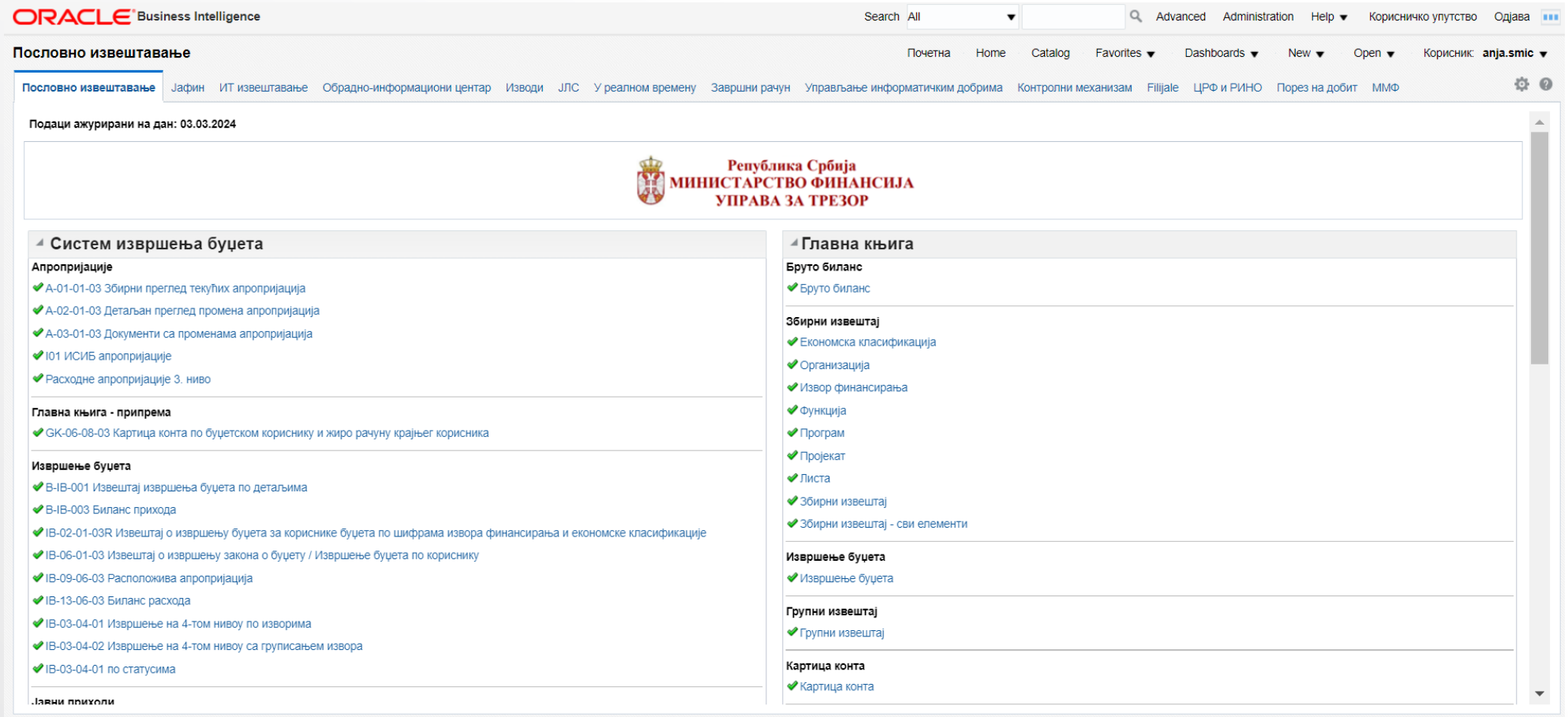
- Interactive access to data and information tailored to user roles
- End users work with reports, charts, tables, and queries in a web environment
- Possibility of drill down analysis, modification of reports and data
- It is also possible to link data from the database with various other sources



OBIEE - Example of report named Amount of appropriation available

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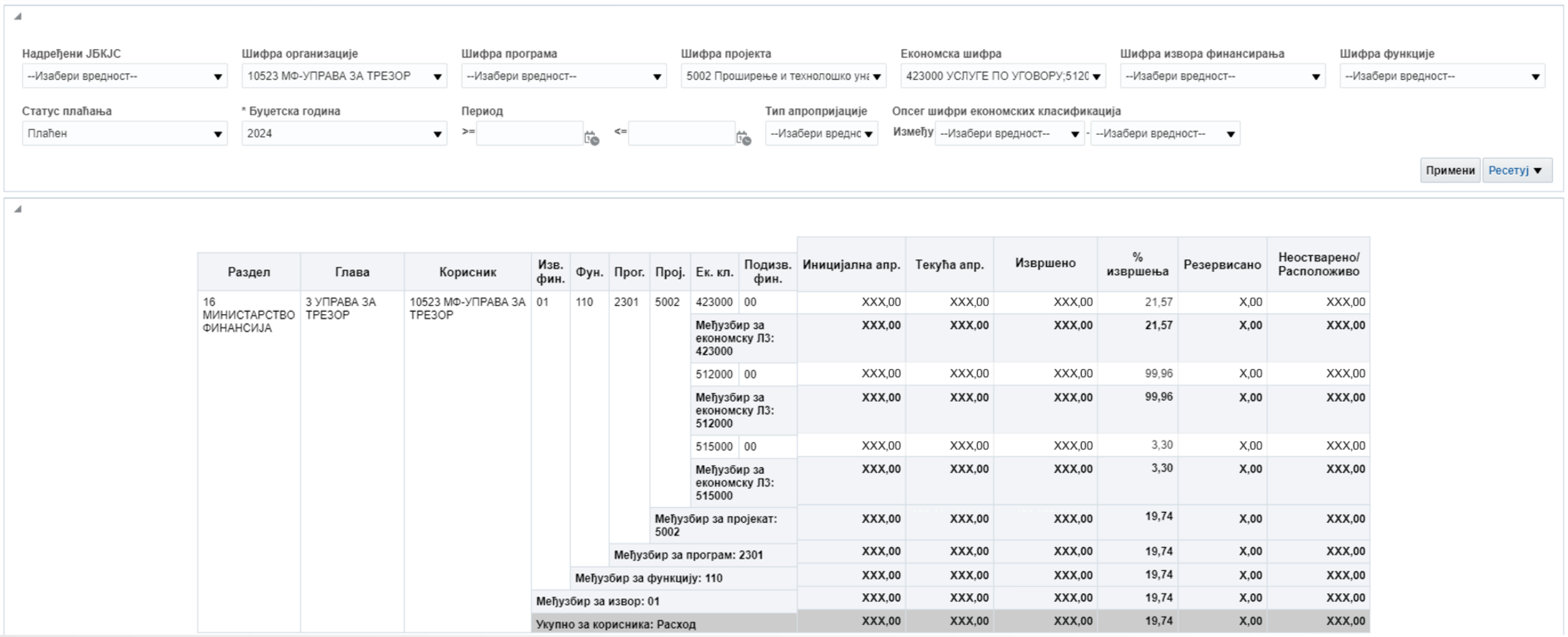

Раздел	Глава	Корисник	Изв. фин.	Фун.	Прог.	Прој.	Ек. кл.	Подизв. фин.	Иницијална апр.	Текућа апр.	Извршено	% извршења	Резервисано	Неостварено/ Расположиво
16 МИНИСТАРСТВО ФИНАНСИЈА	3 УПРАВА ЗА ТРЕЗОР	10523 МФ-УПРАВА ЗА ТРЕЗОР	01	110	2301	5002	423000	00	XXX,00	XXX,00	XXX,00	21,57	X,00	XXX,00
							Међузбир за економску Л3: 423000		**XXX,00**	**XXX,00**	**XXX,00**	**21,57**	**X,00**	**XXX,00**
							512000	00	XXX,00	XXX,00	XXX,00	99,96	X,00	XXX,00
							Међузбир за економску Л3: 512000		**XXX,00**	**XXX,00**	**XXX,00**	**99,96**	**X,00**	**XXX,00**
							515000	00	XXX,00	XXX,00	XXX,00	3,30	X,00	XXX,00
							Међузбир за економску Л3: 515000		**XXX,00**	**XXX,00**	**XXX,00**	**3,30**	**X,00**	**XXX,00**
						Међузбир за пројекат: 5002			**XXX,00**	**XXX,00**	**XXX,00**	**19,74**	**X,00**	**XXX,00**
					Међузбир за програм: 2301				**XXX,00**	**XXX,00**	**XXX,00**	**19,74**	**X,00**	**XXX,00**
				Међузбир за функцију: 110					**XXX,00**	**XXX,00**	**XXX,00**	**19,74**	**X,00**	**XXX,00**
			Међузбир за извор: 01						**XXX,00**	**XXX,00**	**XXX,00**	**19,74**	**X,00**	**XXX,00**
			Укупно за корисника: Расход						**XXX,00**	**XXX,00**	**XXX,00**	**19,74**	**X,00**	**XXX,00**

OBIEE – Report examples

Budget execution at the 4th level

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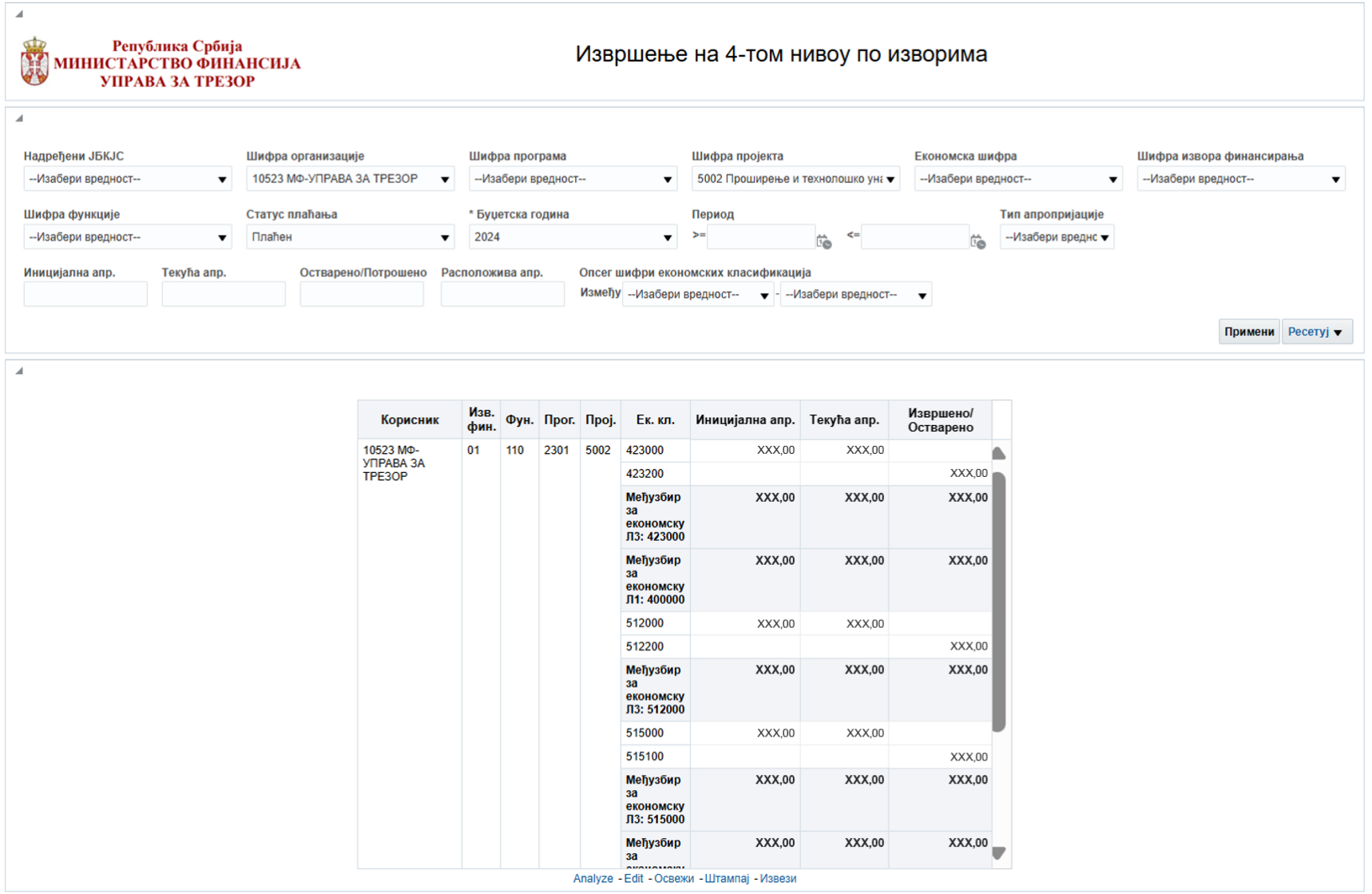

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УПРАВА ЗА ТРЕЗОР

Извршење на 4-том нивоу по изворима

Надређени ЈБКЈС: --Изабери вредност--
Шифра организације: 10523 МФ-УПРАВА ЗА ТРЕЗОР
Шифра програма: --Изабери вредност--
Шифра пројекта: 5002 Проширење и технолошко уна
Економска шифра: --Изабери вредност--
Шифра извора финансирања: --Изабери вредност--
Шифра функције: --Изабери вредност--
Статус плаћања: Плаћен
* Буџетска година: 2024
Период: >= <=
Тип апропријације: --Изабери вреднс
Иницијална апр.
Текућа апр.
Остварено/Потрошено
Расположива апр.
Опсег шифри економских класификација
Између: --Изабери вредност-- - --Изабери вредност--

Примени | Ресетуј

Корисник	Изв. фин.	Фун.	Прог.	Прој.	Ек. кл.	Иницијална апр.	Текућа апр.	Извршено/ Остварено
10523 МФ-УПРАВА ЗА ТРЕЗОР	01	110	2301	5002	423000	XXX,00	XXX,00	
					423200			XXX,00
					Међузбир за економску Л3: 423000	**XXX,00**	**XXX,00**	**XXX,00**
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					512000	XXX,00	XXX,00	
					512200			XXX,00
					Међузбир за економску Л3: 512000	**XXX,00**	**XXX,00**	**XXX,00**
					515000	XXX,00	XXX,00	
					515100			XXX,00
					Међузбир за економску Л3: 515000	**XXX,00**	**XXX,00**	**XXX,00**
					Међузбир за	**XXX,00**	**XXX,00**	**XXX,00**

Analyze - Edit - Освежи - Штампај - Извези

OBIEE - Example of report named Accounting report in detail

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УПРАВА ЗА ТРЕЗОР

Књижења детаљна

Надр. ЈБКЈС: --Изабери вреднс | ЈБКЈС: 10523 | Функција: --Изабери вреднс | Програм: --Изабери вреднс | Пројекат: 5002 | Ек. Кл.: 512221;512222;5' | Подек.Кл.: --Изабери вреднс | Изв. Фин.: --Изабери вреднс | Подизв.Фин.: --Изабери вреднс | Валута: --Изабери вреднс

Налог Изв.: --Изабери вреднс | Налог Кат.: --Изабери вреднс | Број налога: --Изабери вреднс | Ниво 1: --Изабери вреднс | Ниво 3: --Изабери вреднс | Број трансакције: >= --Изабери вреднс <= --Изабери вреднс | Број документа: --Изабери вреднс | Опис типа документа: --Изабери вреднс

Датум књижења: >= <= | Период: >= --Изабери <= --Изабери | Буџетска година: 2024

Примени | Ресетуј

Дугује Дин | Потражује Дин | Салдо Дин | Дугује ино | Потражује ино | Салдо ино

Примени | Ресетуј

	Дугује Дин	Потражује Дин	Салдо Дин	Дугује ино	Потражује ино	Салдо ино
Укупно	XXX,00	X,00	XXX,00	X,00	X,00	X,00

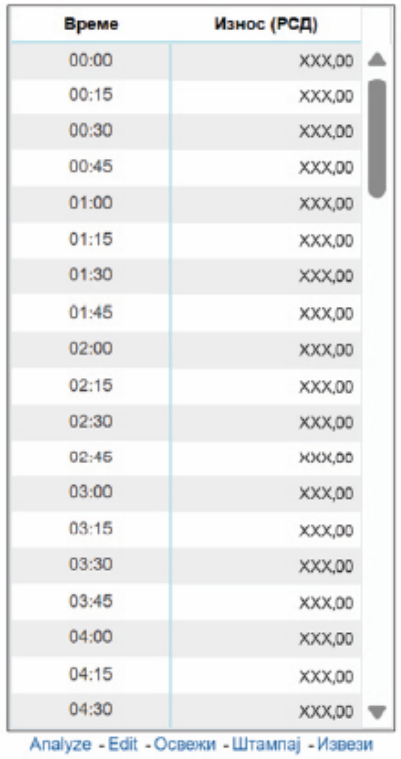
Трн	Налог	Ставка	Опис	Налог изв	Налог кат	Датум књижења	ЈБКЈС	Функција	Ек.Кл.	Подек. Кл.	Изв. Фин.	Подизв. Фин.	Програм	Пројекат	Број документа	Опис типа документа	Дугује Дин	Потражује Дин	Дугује ино	Потражује ино
10874443	10574296		404-00-346-8/23-001-009 licence Centrala	1		11.01.2024	10523	110	515192		01	00	2301	5002	4230418	Појединачне преузете обавезе	XXX,00	X,00	X,00	X,00
10874444	10574297		404-00-346-8/23-001-009 racunarska oprema Centrala	1		11.01.2024	10523	110	512221		01	00	2301	5002	4230419	Појединачне преузете обавезе	XXX,00	X,00	X,00	X,00
10878697	10578550		404-00-346-8/23-001-009 izrada softvera Centrala	1		11.01.2024	10523	110	423211		01	00	2301	5002	4230420	Појединачне преузете обавезе	XXX,00	X,00	X,00	X,00
11613841	11293181		404-00-70-8/23-001-009 odrzavanje sistema za 23.12.2023.-22.01.2024. Centrala	1		06.02.2024	10523	110	423212		01	00	2301	5002	4464414	Појединачне преузете обавезе	XXX,00	X,00	X,00	X,00
12565184	12205935		404-00-70-8/23-001-009 odrzavanje sistema za 23.01.-22.02.2024. Centrala	1		11.03.2024	10523	110	423212		01	00	2301	5002	4784986	Појединачне преузете обавезе	XXX,00	X,00	X,00	X,00
13669322	13270875		404-00-70-8/23-001-009 Usluge odrzavanja softvera 22.03.2024. Centrala	1		09.04.2024	10523	110	423212		01	00	2301	5002	5179191	Појединачне преузете обавезе	XXX,00	X,00	X,00	X,00

Analyze - Edit - Освежи - Штампај - Извези

OBIEE - Example of a Real Time report

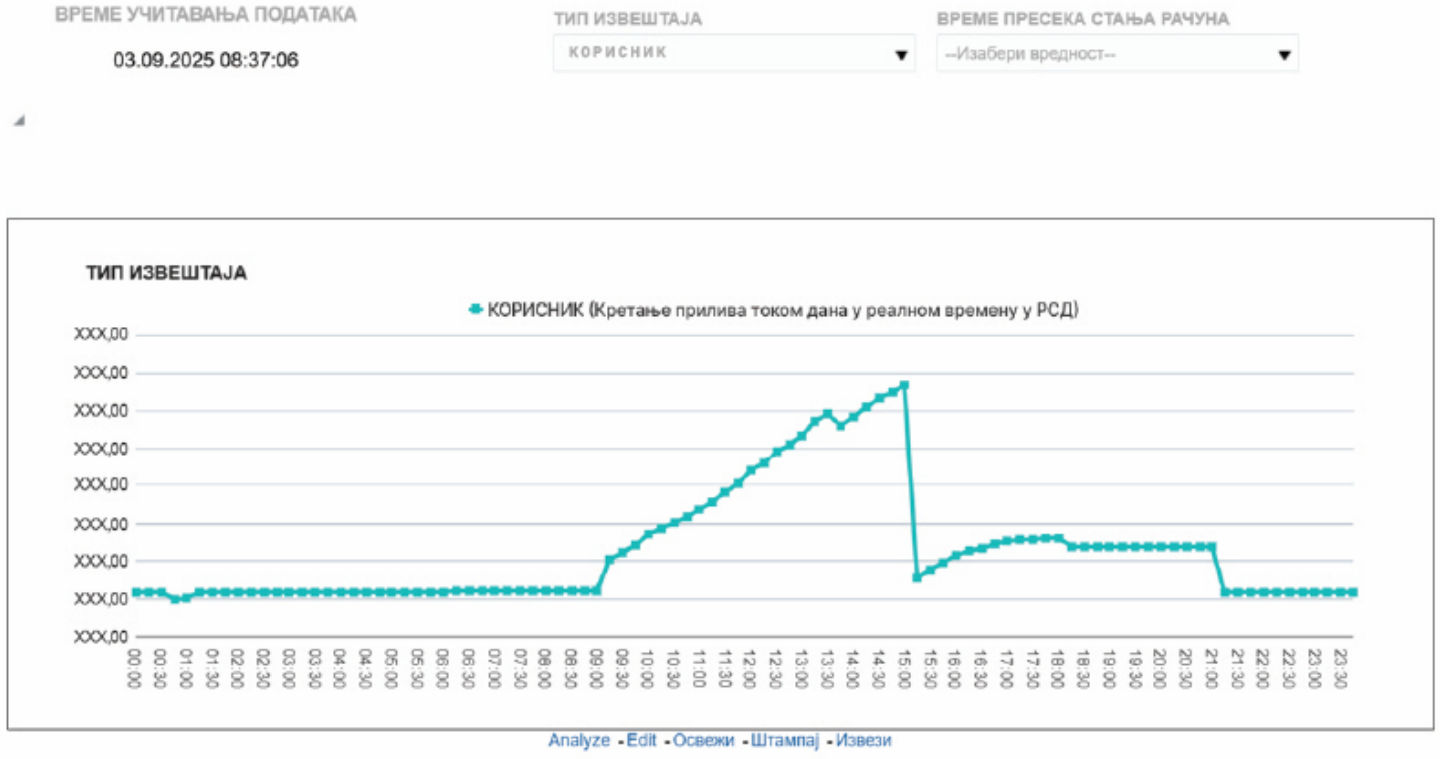
MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

- Real Time reporting
  - Real Time data with minimum delay time



Време	Износ (РСД)
00:00	XXX,00
00:15	XXX,00
00:30	XXX,00
00:45	XXX,00
01:00	XXX,00
01:15	XXX,00
01:30	XXX,00
01:45	XXX,00
02:00	XXX,00
02:15	XXX,00
02:30	XXX,00
02:45	XXX,00
03:00	XXX,00
03:15	XXX,00
03:30	XXX,00
03:45	XXX,00
04:00	XXX,00
04:15	XXX,00
04:30	XXX,00

Analyze - Edit - Освежи - Штампај - Извези



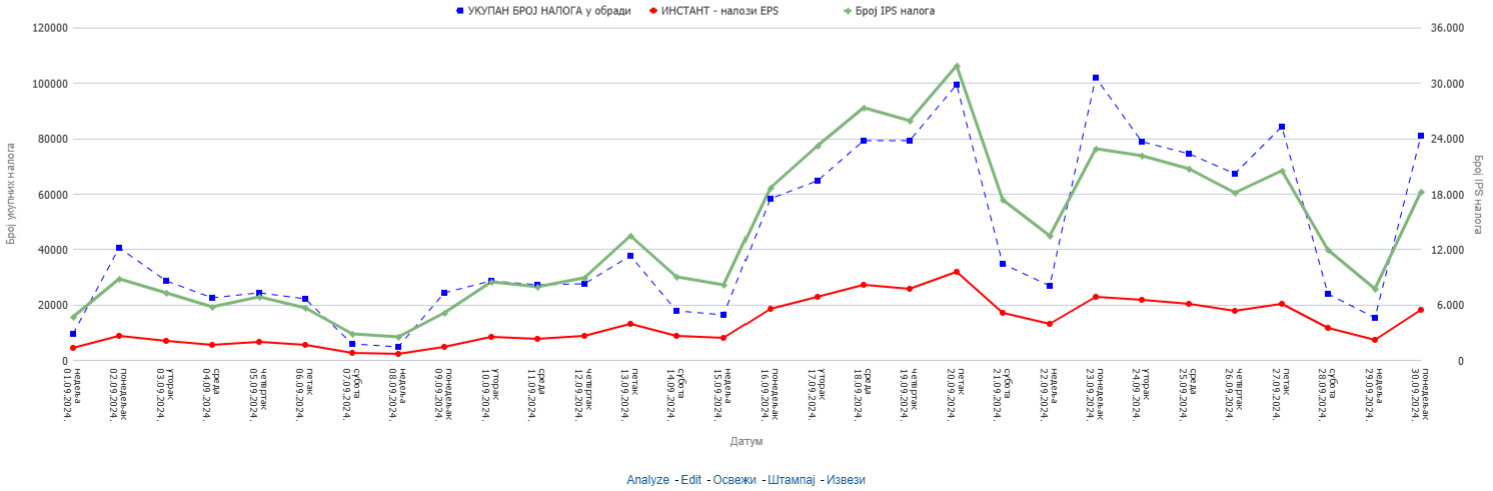
OBIEE – Report examples

Report on daily processing data – EPS

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

Датум	Дан	Иницијализација (START-DANA)	Објава КРАЈА РАДА RTGS-NBS	Процедура ЕПС-KRAJ-DANA (mm:ss)	УКУПАН БРОЈ НАЛОГА у обради	Број IPS налога
01.09.2024.	недеља	00:12:19	nema	00:04	9.658	4.801
02.09.2024.	понедељак	00:06:57	18:37:43	00:11	40.932	8.929
03.09.2024.	уторак	00:17:36	18:06:48	00:07	28.808	7.378
04.09.2024.	среда	00:11:46	18:02:10	00:06	22.643	5.850
05.09.2024.	четвртак	00:10:25	18:07:52	00:07	24.631	7.005
06.09.2024.	петак	00:08:48	18:07:03	00:06	22.354	5.810
07.09.2024.	субота	00:12:24	nema	00:03	6.036	2.993
08.09.2024.	недеља	00:12:58	nema	00:03	5.226	2.585
09.09.2024.	понедељак	00:12:06	18:02:50	00:07	24.643	5.201
10.09.2024.	уторак	00:10:49	18:05:16	00:08	29.070	8.555
11.09.2024.	среда	00:09:27	18:04:32	00:09	27.330	8.071
12.09.2024.	четвртак	00:14:53	18:04:28	00:09	27.803	9.042
13.09.2024.	петак	00:12:02	18:03:20	00:13	37.855	13.530
14.09.2024.	субота	00:12:44	nema	00:07	18.211	9.078
15.09.2024.	недеља	00:13:01	nema	00:07	16.615	8.280
16.09.2024.	понедељак	00:15:45	19:06:37	00:20	58.473	18.779
17.09.2024.	уторак	00:12:31	18:06:10	00:18	64.979	23.300
18.09.2024.	среда	00:13:18	18:05:53	00:26	79.539	27.466

Графички приказ времена процеса СЕПТЕМБАР 2024

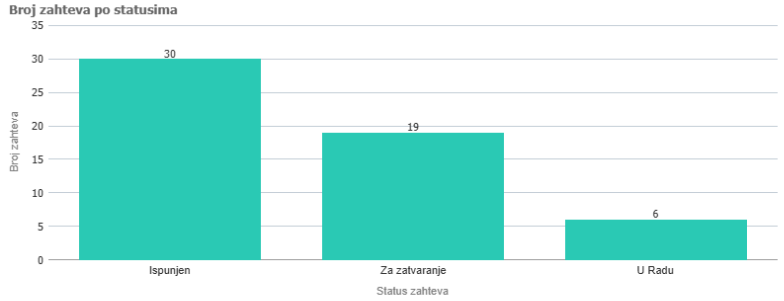


Analyze - Edit - Освежи - Штампај - Извези

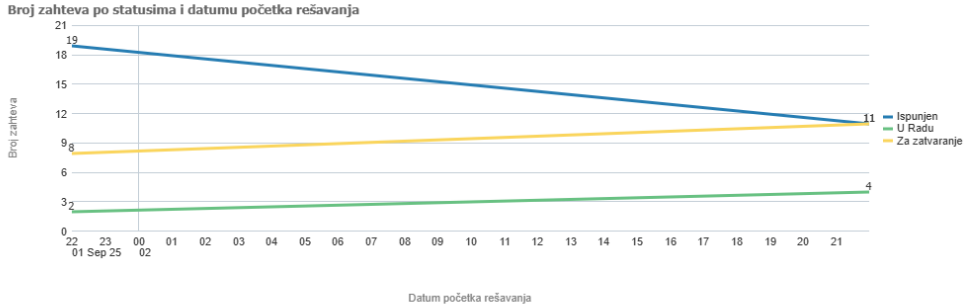
OBIEE – Report examples

IT reporting – Number of requests by status

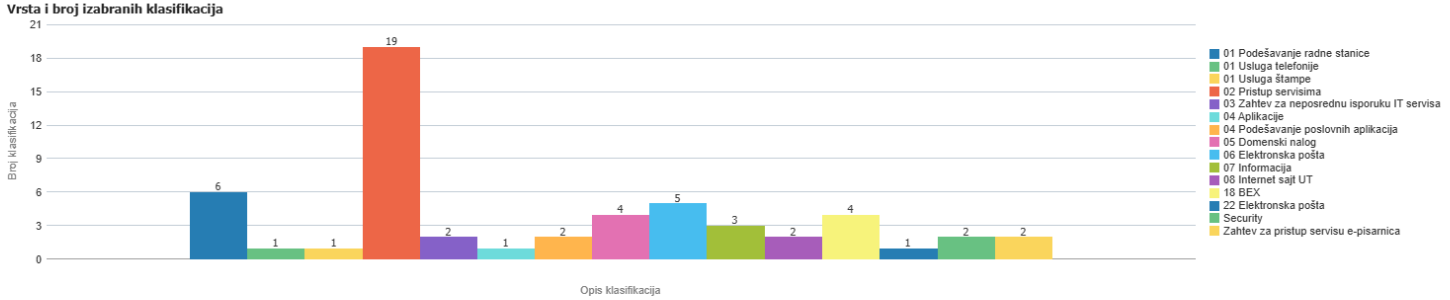
MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION



Analyze - Edit - Освежи - Штампај - Извези



Analyze - Edit - Освежи - Штампај - Извези



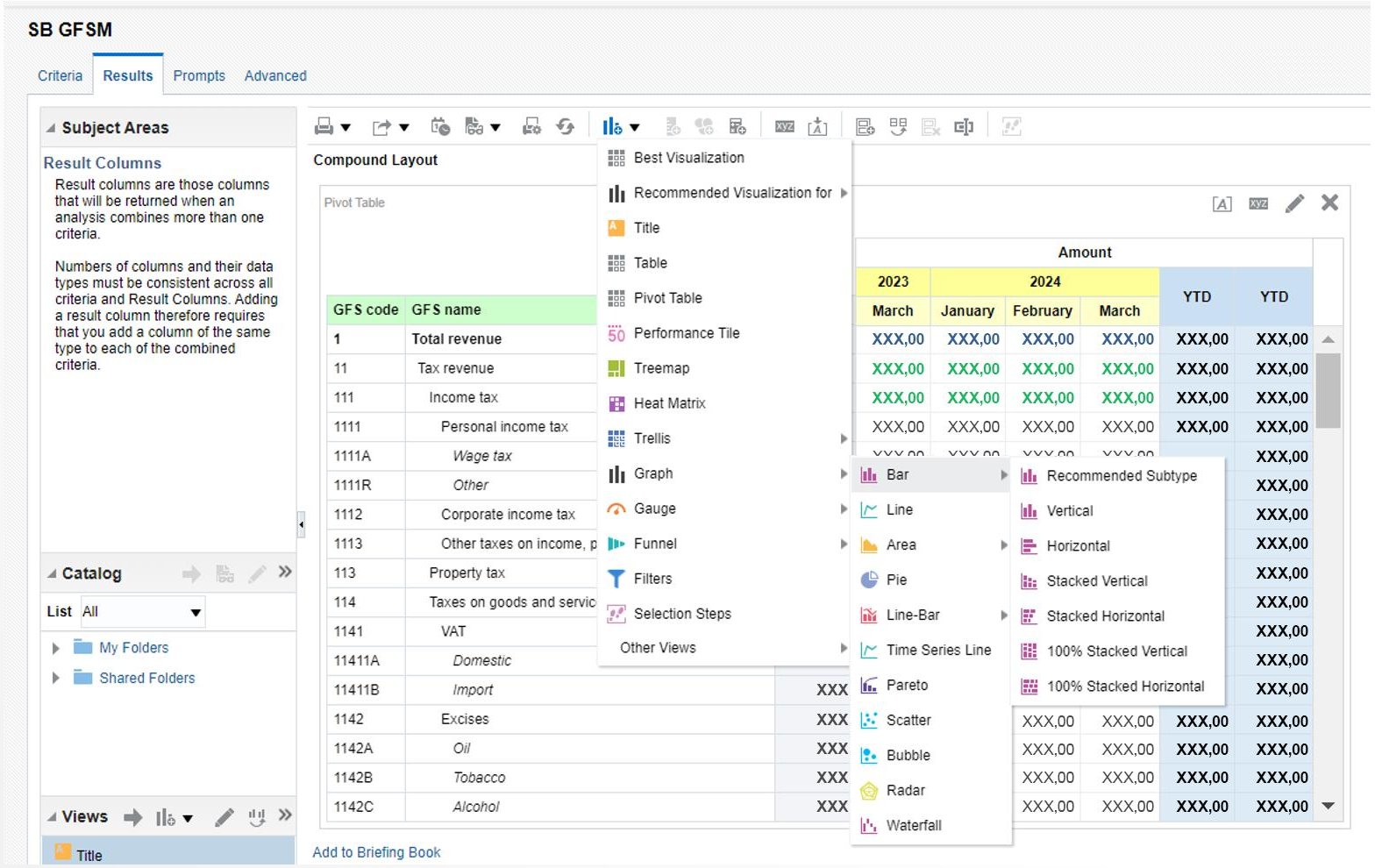
Analyze - Edit - Освежи - Штампај - Извези

Servisni zahtev ID	Naziv zahteva	Status zahteva	Opis klasifikacije	Datum početka rešavanja zahteva	Vreme početka rešavanja zahteva	Datum završetka rešavanja zahteva	Vreme završetka rešavanja zahteva	Očekivani završetak rešavanja	Datum rešavanja	Nosilac rešavanja	Grupa za podršku	Prioritet zahteva	Osoba rešavalac	Grupa rešavalac	Prekršen SLA	Usluga ID	Naziv usluge
SR70667	Za Nenada	Ispunjen	04 Aplikacije	1.9.2025.	08:03:43	1.9.2025.	08:38:08	1.10.2025. 07:56:05	1.9.2025. 08:38:08	Dragana Tošev	Service Desk analitičari	5	Nenad Dučić	OTSP - zapadna Srbija	0	103	Radna stanica
SR70668	Nalozi-01092025-1	Za zatvaranje	05 Domenski nalog	1.9.2025.	08:07:27	1.9.2025.	08:14:25	12.9.2025. 07:59:05	2.9.2025. 07:21:30	Sofija Mandić	Service Desk analitičari	4	Sofija Mandić	Service Desk analitičari	0	103	Radna stanica
SR70669	Za Nenada	Ispunjen	01 Podešavanje radne stanice	1.9.2025.	08:16:51	1.9.2025.	08:56:25	12.9.2025. 08:16:05	1.9.2025. 08:56:25	Dijana Milošević	Service Desk analitičari	4	Nenad Dučić	OTSP - zapadna Srbija	0	103	Radna stanica
SR70670	Sajt- izmena plana jn	Ispunjen	08 Internet sajt UT	1.9.2025.	08:28:51	1.9.2025.	10:03:21	12.9.2025. 08:18:06	1.9.2025. 10:03:21	Dijana Milošević	Service Desk analitičari	4	Maja Ilić	Internet sajt Uprave za trezor	0	15	Sajt Uprave za trezor
SR70671	мејл адреса-Немања Вучићевић	Za zatvaranje	06 Elektronska pošta	1.9.2025.	08:24:59	1.9.2025.	08:29:14	12.9.2025. 08:22:06	1.9.2025. 08:29:14	Sofija Mandić	Service Desk analitičari	4	Sofija Mandić	Service Desk analitičari	0	100	Elektronska pošta
SR70672	Domenski nalog- Nina Panovic	Ispunjen	05 Domenski nalog	1.9.2025.	08:27:51	1.9.2025.	08:58:08	12.9.2025. 08:27:06	1.9.2025. 08:58:08	Dijana Milošević	Service Desk analitičari	4	Dijana Milošević	Service Desk analitičari	0	103	Radna stanica

OBIEE - Self-use of the report creation tool

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

- An intuitive tool that allows users to use it easily
- Changing the form of the report (adding new columns, sums, etc.)
- Adding new views (charts, pivot tables, etc.)
- Creating New Reports



OBIEE – Report examples
Government Finance Statistics (GFS)

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

2025 | **2024** | copy of page 1

Република Србија
МИНИСТАРСТВО ФИНАНСИЈА
УПРАВА ЗА ТРЕЗОР

SB GFSM

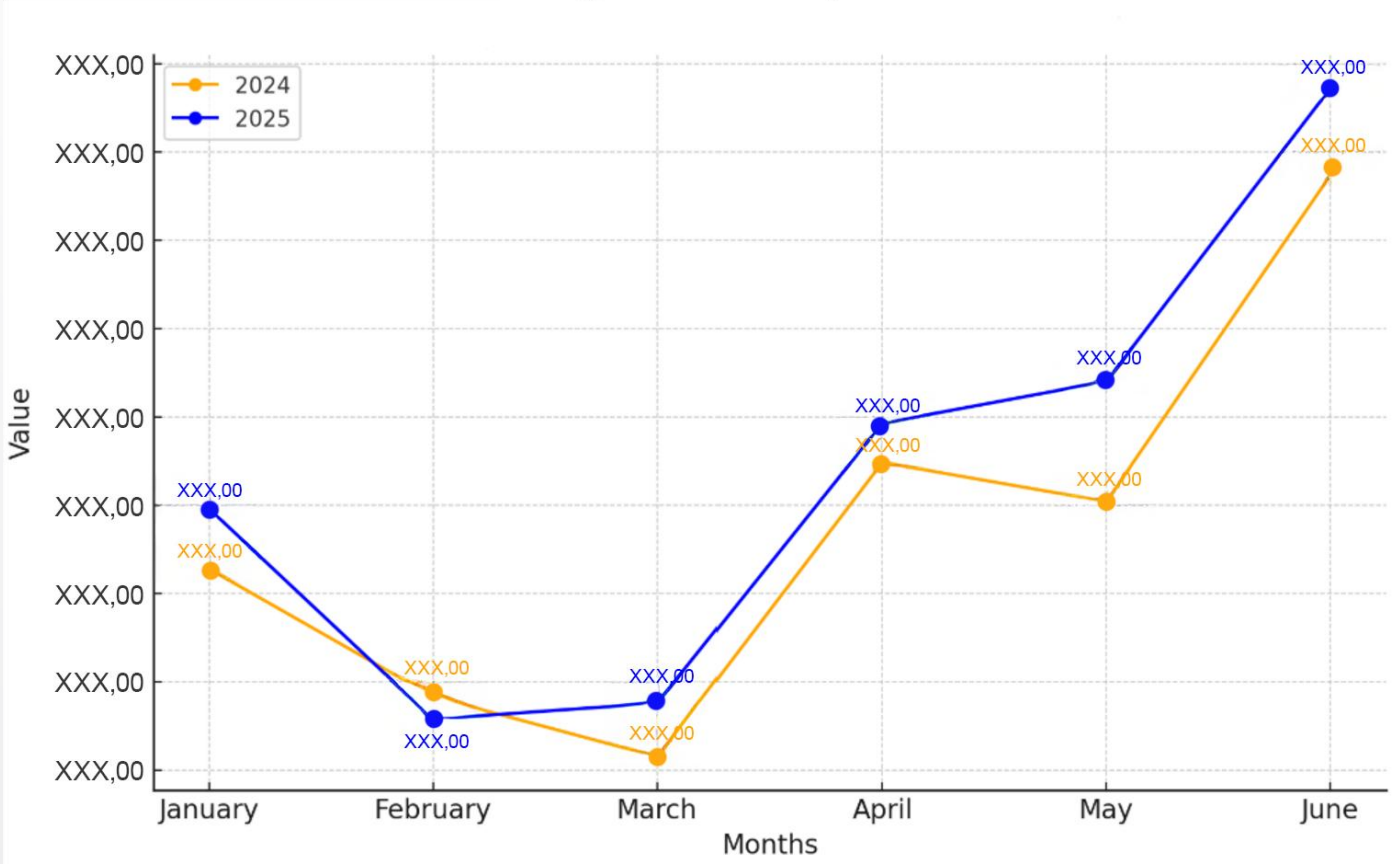
*amount in millions Serbian dinar

		Amount												
		2024												YTD
GFS code	GFS name	January	February	March	April	May	June	July	August	September	October	November	December	
1	**Total revenue**	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
11	Tax revenue	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
111	Income tax	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1111	Personal income tax	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1111A	*Wage tax*	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1111R	*Other*	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1112	Corporate income tax	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1113	Other taxes on income, profits, and capital gains	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
113	Property tax	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
114	Taxes on goods and services	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1141	VAT	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
11411A	*Domestic*	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
11411B	*Import*	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1142	Excises	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1142A	*Oil*	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**
1142B	*Tobacco*	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	XXX,00	**XXX,00**

OBIEE – Report examples

Government Finance Statistics (GFS): comparison

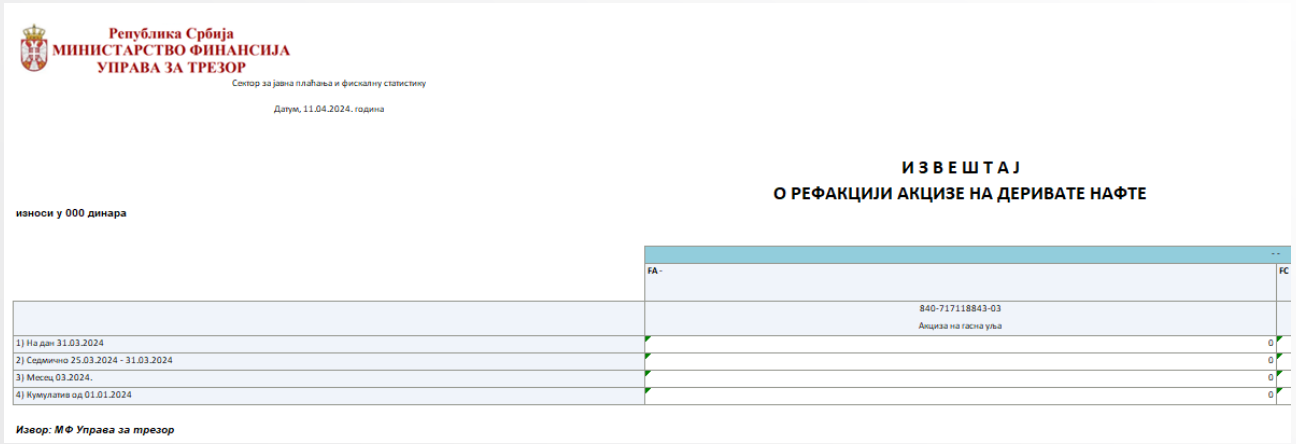
MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION



OBIEE - Customization of the Business Intelligence System

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

- Oracle BI Publisher
  - Creating pixel perfect reports in various formats that can be distributed to users, clients, business partners, etc.



Република Србија
МИНИСТАРСТВО ФИНАНСИЈА
УПРАВА ЗА ТРЕЗОР

Сектор за јавна плаћања и фискалну статистику

Датум, 11.04.2024. година

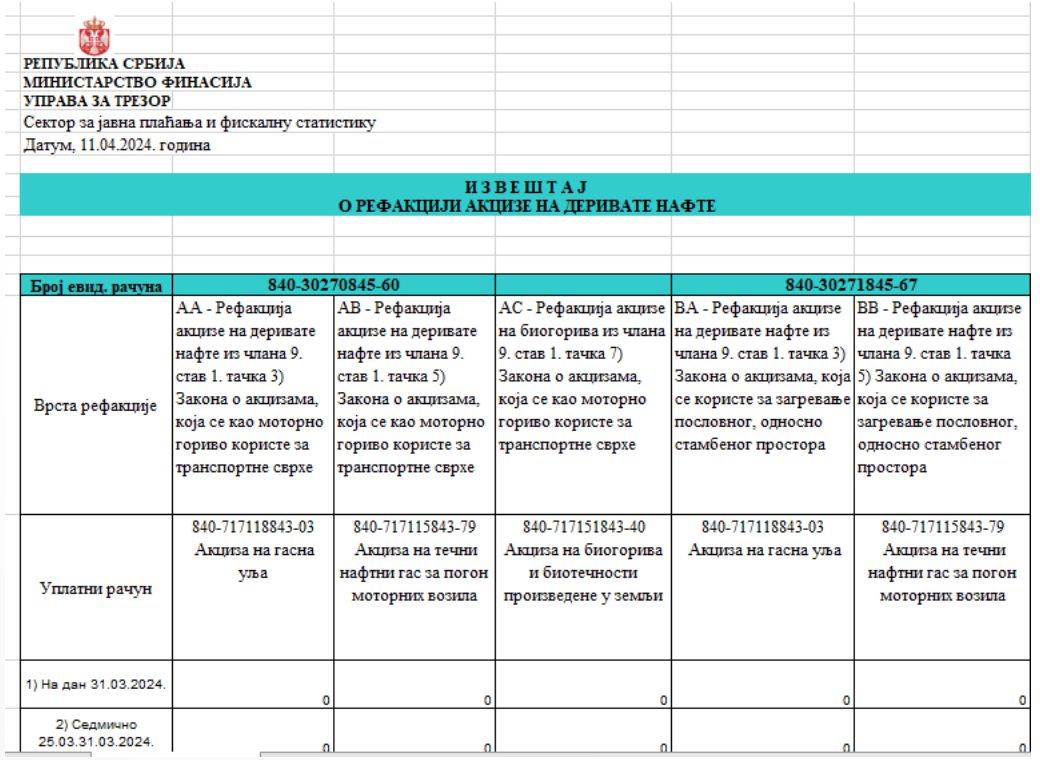
ИЗВЕШТАЈ
О РЕФАКЦИЈИ АКЦИЗЕ НА ДЕРИВАТЕ НАФТЕ

износи у 000 динара

	FA -	FC
	840-717118843-03 Акциза на гасна уља	
1) На дан 31.03.2024	0	
2) Седмично 25.03.2024 - 31.03.2024	0	
3) Месец 03.2024.	0	
4) Кумулатив од 01.01.2024	0	

Извор: МФ Управа за трезор

Report without using BI Publisher



РЕПУБЛИКА СРБИЈА
МИНИСТАРСТВО ФИНАСИЈА
УПРАВА ЗА ТРЕЗОР
Сектор за јавна плаћања и фискалну статистику
Датум, 11.04.2024. година

ИЗВЕШТАЈ
О РЕФАКЦИЈИ АКЦИЗЕ НА ДЕРИВАТЕ НАФТЕ

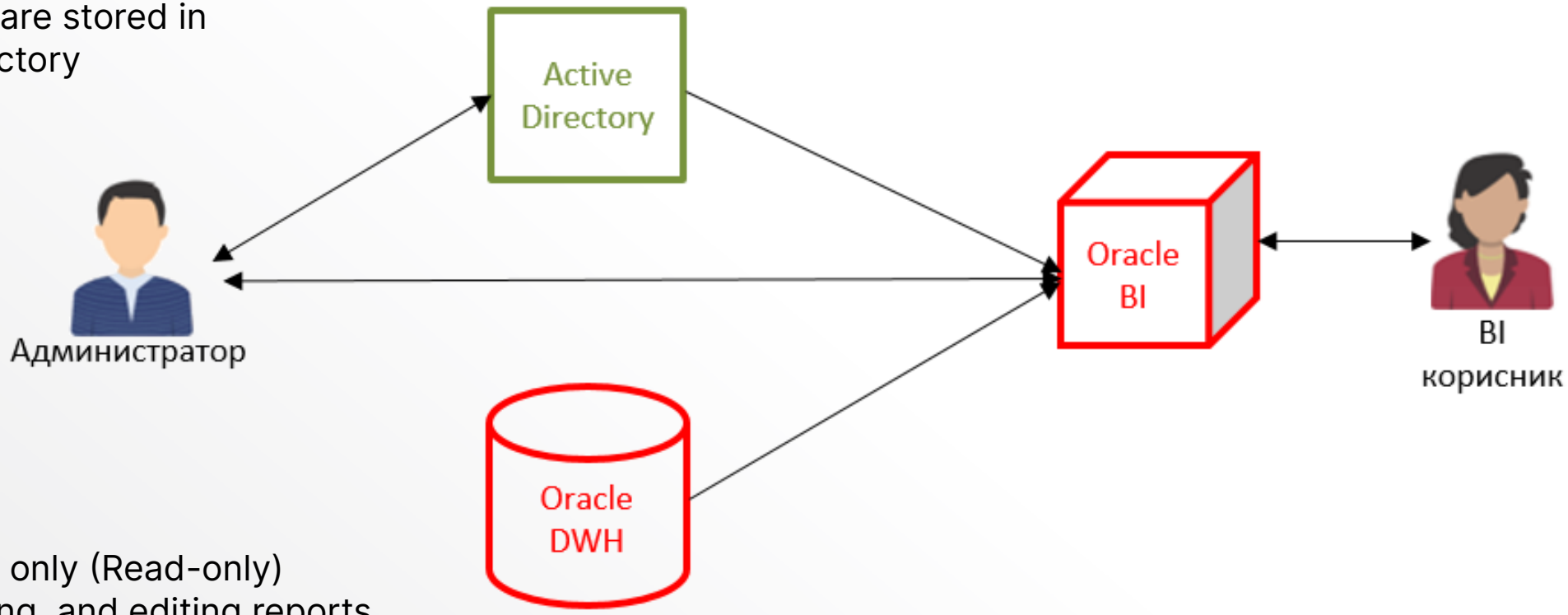
Број евид. рачуна	840-30270845-60			840-30271845-67	
Врста рефакције	АА - Рефакција акцизе на деривате нафте из члана 9. став 1. тачка 3) Закона о акцизама, која се као моторно гориво користе за транспортне сврхе	АВ - Рефакција акцизе на деривате нафте из члана 9. став 1. тачка 5) Закона о акцизама, која се као моторно гориво користе за транспортне сврхе	АС - Рефакција акцизе на биогорива из члана 9. став 1. тачка 7) Закона о акцизама, која се као моторно гориво користе за транспортне сврхе	ВА - Рефакција акцизе на деривате нафте из члана 9. став 1. тачка 3) Закона о акцизама, која се користе за загревање пословног, односно стамбеног простора	ВВ - Рефакција акцизе на деривате нафте из члана 9. став 1. тачка 5) Закона о акцизама, која се користе за загревање пословног, односно стамбеног простора
Уплатни рачун	840-717118843-03 Акциза на гасна уља	840-717115843-79 Акциза на течни нафтни гас за погон моторних возила	840-717151843-40 Акциза на биогорива и биотечности произведене у земљи	840-717118843-03 Акциза на гасна уља	840-717115843-79 Акциза на течни нафтни гас за погон моторних возила
1) На дан 31.03.2024.	0	0	0	0	0
2) Седмично 25.03.31.03.2024.	0	0	0	0	0

Report with using BI Publisher

OBIEE - Security aspect

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

- Personalized user accounts
- User accounts are stored in the Active Directory



USER ROLES

- Report viewing only (Read-only)
- Viewing, creating, and editing reports
- System administrator

CONCLUSION

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION

- Consolidated platform – all reporting in one place
- Optimized for business requirements
- Single source of truth

VARIOUS POSSIBILITIES

- Expanding existing data sources
- Adding new data sources
- Creating new reports
- Creating "ad-hoc" reports and analyses
- Creationg real time reports

THANK YOU!

Any Questions?

MINISTRY OF FINANCE
OF THE REPUBLIC OF SERBIA
TREASURY ADMINISTRATION