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**SEPA DIRECT DEBIT MODULE**

# SEPA DIRECT DEBIT MODULE

## NOVA BANKARSKA USLUGA

### Šta je SEPA?

Single Euro Payments Area (SEPA) je evropska inicijativa kojom se uvodi novi skup platnih instrumenata, tehničkih standarda, poslovnih pravila i zakonskih regulativa u cilju formiranja veoma široke baze banaka i njihovih klijenata koji koriste iste mehanizme plaćanja u evrima, bez obzira na to u kojoj se zemlji nalaze učesnici transakcije.

### Vodeća uloga Udruženja banaka i Narodne banke

Shvatajući važnost ove inicijative Udruženje banaka Srbije i Narodna banka Srbije su nizom uputstava i odluka stvorili uslove za otvaranje prve klirinške kuće u Beogradu koja domaćim bankama i njihovim klijentima omogućava da učestvuju u domaćim tokovima plaćanja u dinarima po proširenim SEPA pravilima.

### Direct Debit kao prvi SEPA servis u Srbiji

Prvi servis koji se implementira je kliring po direktnim zaduženjima (Direct Debit), sistem direktne naplate koji ubrzava, uprošćava i pojeftinjuje procese naplate na osnovu ugovora dva pravna lica i unapređuje poslovanje firmi koje imaju dobre partnerske odnose sa drugim firmama.

### SEPA Direct Debit nije zamena za prinudnu naplatu

Ova nova usluga nije zamena za postojeći sistem direktnog zaduženja i prinudne naplate u Srbiji. Umesto toga promovise se novi, moderniji i efikasniji način naplate potraživanja.

### Institucije koje učestvuju u sistemu

U svakoj transakciji se javlja više učesnika: poverilac (creditor), banka poverioca, klirinška kuća (Udruženje banaka), dužnik (debtor) i banka dužnika. Poverilac i dužnik sklapaju poslovni aranžman koji podrazumeva plaćanje dužnika poveriocu nakon određenog vremena ili nakon ispunjenih uslova za naplatu.

## STANDARDI

### Novi evropski standardi za plaćanje i naplate

Prateći standarde SEPA, Srbija će biti tehnološki kompatibilna sa sistemima transfera novca u EU.

### Fleksibilni standardi

Novim sistemom je omogućeno da se lako specificiraju i implementiraju opcioni dodatni servisi, bilo da su na globalnom nivou, bilo da su specifični za lokalne implementacije.

### Novi standardi donose efikasnost i uštede

Sama standardizacija za banke i njihove klijente znači ubrzavanje poslovnih procesa, smanjenje troškova poslovanja i tim povećanje profita za obe strane.

Kliring će se raditi na dnevnom nivou što će bankama i klijentima smanjiti troškove naplate koje bi inače imali po pojedinačnim transferima po nalogima zaduženja.

## NEW BANKING SERVICE

### What is SEPA?

Single Euro Payments Area (SEPA) is a European initiative for introduction of a set of new payment instruments, technical standards, business rules and legal regulations, whose main goal is creation of a wide base of banks and their clients using the same payment mechanisms for performing transactions in EUR, regardless of the country the transaction participants are from.

### Leading role of Bank Association and Central Bank

Realizing the importance of this initiative, The Association of Banks of Serbia and Central bank of Serbia created a set of guidelines and decisions enabling creation of the first Clearing House in Belgrade which enables local banks and their customers to participate in domestic payment flows in RSD according to slightly extended set of SEPA rules.

### Direct Debit as first SEPA service in Serbia

The first service to be implemented is direct debit clearing, which speeds up, simplifies and reduces cost of collection processes based on contract signed by two legal entities, and tends to improve business of companies which have good partnership relations.

### SEPA Direct Debit is not a forced collection substitute

This new service will not substitute existing system of forced collection in Serbia. Instead, a new, state of the art, more efficient receivables collection system is promoted.

### Institutions participating in the system

There are several participants in every transaction, including creditor, creditor's bank, clearing house (bank association), debtor, and debtor's bank. Debtor and creditor make business arrangement according to which debtor performs payment to creditor at specified time, or after certain collection related conditions have been met.

## STANDARDS

### New European Payment and Collection Standards

Following SEPA standards, Serbia shall become technologically compatible with new money transfer systems in EU.

### Flexible standards

The new system enables that optional additional services can be easily specified and implemented, whether they are at global level, or specific for local implementations.

### New standards bring efficiency and savings

The standardization is important to bank and their customers, since it speeds up business processes, and reduces operational costs, thus bringing profit increase to both sides.

Since clearing is performed on daily bases, bank collection costs shall be reduced by elimination of individual transfer costs based on debiting orders.

## **INTEGRACIJA SA SISTEMIMA BI I PUB2000**

### **Antegra ima rešenje za Direct Debit za banke u Srbiji**

Antegra je u skladu sa uputstvima i odlukama Udruženja banaka Srbije i Narodne banke Srbije, a u saradnji sa partnerskim firmama Pexim i Omnilogika iz Beograda, razvila novi proizvod namenjen bankama pod imenom SEPA Direct Debit. Ovaj softverski modul omogućava banci da učestvuje u SEPA Direct Debit kliringu u Srbiji.

### **Antegrino rešenje se integriše sa bankarskim sistemom u banci**

Aplikacija komunicira sa jezgrom bankarskog softvera koji banka već koristi, preko jasno definisanih servisa.

Samim tim nema nepotrebnog dupliranja podataka po aplikacijama, uz velike probleme da se tako „usitnjeni“ i duplirani podaci kasnije konsoliduju. Naše rešenje nema posebnu evidenciju klijenata i računa platnog prometa. Ove evidencije ostaju tamo gde i treba da budu – u bankarskom sistemu iz koga se i sada koriste.

### **Out of box podržani su Antegrin i Peximov Core Banking sistem**

Sistem se isporučuje sa gotovim servisima za komunikaciju sa Antegrinim Bi bankarskim sistemom, kao i sa Peximovim PUB2000 sistemom. Očekuje se da prilagođavanje aplikacije drugim bankarskim softverima zahteva 5-15 radnih dana.

## **POUZDAN PARTNER**

### **Antegra je vodeći isporučilac bankarskih sistema u regionu**

Antegra doo Beograd je već 14 godina prisutna na tržištu bankarskog softvera. Naša rešenja, uglavnom kompletni bankarski sistemi, koriste se u 20 banaka u regionu.

### **Najviši nivo Oracle sertifikacije**

Antegra je Oracle Certified Advanced Partner, što je najviši partnerski status koji neka kompanija može imati u Oracle partnerskoj mreži. Ovo je i priznanje Antegri za njenu stručnost u implementaciji i korišćenju Oracle tehnologija.

### **Asseco - šesti u Evropi**

Nedavnom akvizicijom, kada je Asseco South East Europe SA postao vlasnik 70% udela u Antegri, postali smo deo mnogo veće firme, firme koja je šesta po veličini IT kuća u Evropi.

### **Antegra i Pexim članovi Asseco Grupe**

Naš partner Pexim doo Beograd je takođe u većinskom vlasništvu Asseco Grupe, a SEPA Direct Debit je prvi proizvod koji je nastao u saradnji Antegre i Pexima. Saradnja ove dve firme na polju bankarskog softvera osigurava stabilnost našeg prisustva na ovom tržištu i uvećava našu sposobnost da bankama ponudimo pravovremena rešenja najvišeg kvaliteta.

## **PREDNOSTI NAŠEG REŠENJA**

### **Prednosti za banku**

- Pojednostavljenje mehanizma direktnog zaduženja
- Harmonizacija sa regulativom Evropske unije
- Najviši nivo podrške

### **Prednosti za klijente banke**

- Efikasniji način za plaćanje i naplatu
- Smanjenje troškova
- Mogućnost integracije sa ERP rešenjima kod klijenta
- Skraćivanje vremena potrebnog za plaćanje i naplatu

## **INTEGRATION WITH BI AND PUB2000**

### **Antegra has Direct Debit solution for banks in Serbia**

In accordance with guidelines and decisions of Association of Banks of Serbia and National Bank of Serbia, and in cooperation with partner companies Pexim and Omnilogika from Belgrade, Antegra has developed a new banking product called SEPA Direct Debit. This software module enables bank to participate in SEPA Direct Debit clearing in Serbia.

### **Antegra's solution is integrated with core banking system within bank**

The application communicates with existing core banking system via clearly defined interfaces. There are no unnecessary data copies all around the applications, so that problems caused by later consolidations are eliminated. Our solution does not include separate recording of clients and payment system accounts.

These records stay where they are supposed to be – in the core banking system from which they are presently used.

### **Out of box support of Antegra and Pexim Core banking system**

System is delivered with already implemented interfaces to Antegra Bi banking system, as well as to Pexim PUB2000 system. According to our estimation, adjustment of the application to work with some other core banking system should require 5 to 15 working days.

## **RELIABLE PARTNER**

### **Antegra is a leading bank system supplier in the region**

Antegra doo Beograd has been present on banking software market for 14 years. Our solutions, mainly complete banking systems, are used in 20 banks in the region.

### **The highest level of Oracle certification**

Antegra is an Oracle Certified Advanced Partner meaning that we have the highest partner status a company can have in Oracle partners' network. For Antegra this represents recognition of professionalism in implementing and using Oracle technologies.

### **Asseco – Number six in Europe**

By recent acquisition, when Asseco South East Europe SA became controlling shareholder of Antegra, we became a part of the sixth largest IT Company in Europe.

### **Antegra and Pexim members of Asseco Group**

Our partner Pexim doo Belgrade is also mostly owned by Asseco Group, and SEPA Direct Debit is the first product developed in Antegra and Pexim cooperation. The cooperation of these two companies in field of banking software ensures our stable and reliable presence in the market and increases our capability to provide banks with state of the art solutions of highest possible quality.

## **ADVANTAGES OF OUR SOLUTION**

### **Advantages for bank**

- Simplified direct debit mechanism
- Harmonization with European Union regulations
- Highest level of software support

### **Advantages for bank clients**

- More efficient payments and collections
- Reduced costs
- Possibility of integration with ERP solutions with clients
- Reduction of time required for payments and collections

## ARHITEKTURA SISTEMA

### Modularnost i integrabilnost

Moderni enterprise sistemi sastoje se od modula koji se kao kockice mogu složiti i spojiti u veće sisteme, pri čemu se moduli mogu nabavljati od različitih proizvođača, a ipak funkcionisati kao skladna celina. Ovim pristupom se postiže i nezavisnost od hardverske platforme, operativnog sistema i formata podataka unutar samih modula.

Naš novi SEPA Direct Debit modul karakterišu arhitektura i topologija modula koji su integrabilni i portabilni nezavisno od hardverskog i softverskog okruženja u kome treba da funkcionišu.

### JEE i SOA

Primenjena tehnologija je bazirana na Java Enterprise Edition (JEE) tehnologijama, servisno orijentisanoj arhitekturi (SOA) i otvorenim standardima sa jasno definisanim konceptima za spajanje sa drugim sistemima.

Unutrašnji procesi su zaštićeni fasadama koje pružaju JEE tehnologije, a pristup potrebnim eksternim servisima se vrši preko proxy implementacija predefinisanih interfejsa. Servisi koje pruža modul se mogu pozivati iz prezentacionog sloja aplikacije ili kao web servisi.

U implementaciji servisa koriste se EJB3.0, POJO, Toplink, JAXB i srodne tehnologije.

GUI je implementiran kao web interfejs, korišćenjem JSF/ADF tehnologija i uz primenu AJAX baziranih komponenti.

### Višeslojna arhitektura

Aplikacija je višeslojna (multi-tier design pattern). Serverski deo radi na Oracle Application Serveru, na bilo kom hardveru i operativnom sistemu koji je podržan od strane Oracle-a.

### Nezavisnost od baze podataka

Aplikacija je pravljen tako da može da radi sa raznim rešenjima za relacije baze podataka, a interoperabilnost je testirana na Oracle i Microsoft SQL database serverima.

### Standardni browser kao user interface

Na strani krajnjeg korisnika koriste se nove verzije Mozila Firefox-a ili Microsoft Internet Explorer-a.

### Otvoreni standardi za izveštavanje

Za potrebe realizacije izveštaja koji se isporučuju sa sistemom, korišćen je JasperReports, koji u novije vreme postaje de facto standard u ovoj oblasti. Kreiranje novih i modifikacija postojećih izveštaja se radi kroz vizuelni alat Jasper iReports. S obzirom da su podaci za izveštavanje u relacionoj bazi banka može se koristiti i bilo koji drugi razvojni alat za pravljenje dodatnih izveštaja.

### Nezavisnost od CBS-a

Softver je potpuno fleksibilan i može se prilagoditi širokom spektru Core Banking sistema.

### Straight Through Processing (STP)

Cilj sistema je da transakcije zaduženja budu automatizovane od momenta sklapanja ugovora među poslovnim subjektima do realizacije poslednjeg plaćanja po tom ugovoru. Automatizovaće se procesi u bankama dužnika i poverioca, sa jasnim i konfigurabilnim vezama ka drugim sistemima kao što su: Core Banking System, Clearing House i ERP sistemi klijenta banke.

## SYSTEM ARCHITECTURE

### Modularity and integrability

Today state of the art enterprise systems consist of modules which can be combined to form larger systems, where these modules can be provided by different vendors, and still perfectly function together. With this approach it is possible to establish systems that are independent from hardware platform, operational system, and data format within the modules.

Our new SEPA Direct Debit module is characterized by architecture and topology of integrable and portable modules which run in various hardware and software environments.

### JEE and SOA

The applied technology is based on Java Enterprise Edition (JEE) technologies, Service Oriented Architecture (SOA) and open standards and has clearly defined concepts for integration with other systems.

The internal processes are covered by facades provided by JEE technologies. Access to external systems is performed via proxy implementations of predefined interfaces. The services provided by the module can be accessed from application presentation tier or as web services.

In service implementation EJB3.0, POJO, Toplink, JAXB and similar technologies are used.

GUI is implemented as a web interface, using JSF/ADF technologies and applying AJAX based components.

### Multi-tier design pattern

Design pattern of the application is multi-tier. The server part of the application works on Oracle Application Server, on any hardware and operating system supported by Oracle.

### Independency from database

The application was created so that it can operate with various relation databases, and its interoperability was tested with Oracle and Microsoft SQL database servers.

### Standard browser as user interface

At end user's side as a User Interface the new versions of Mozilla Firefox or Microsoft Internet Explorer are used.

### Open reporting standards

Reports delivered by this system are realized by using JasperReports, which has become de facto standard in this area. Creation of a new, as well as modification of existing reports, is performed via iReports visual tools. Considering that data used by the system are in relation database, bank can use any available tool for creation of additional reports.

### Independency from CBS

Software is completely flexible and it can be adjusted to a wide range of Core Banking systems.

### Straight Through Processing (STP)

The aim of the system is to automate debiting transactions from the moment contract between business entities is entered into the system, to the moment of last contract related transaction realization. All processes shall be automated in both creditors' and debtors' banks, including clear and configurable services of external systems such as: Core Banking System, Clearing House and ERP bank client systems.

## **PLATFORMA**

### **Potreban je Java aplikativni server**

U nastavku su date preporuke za hardver i softver za java aplikativni server koji bi podržao 20 do 100 korisnika.

### **Preporučeni hardver**

- Quad-Core Intel Xeon Procesor ili 2x Dual-Core Intel Xeon/AMD Opteron Procesor ili Dual-Core Intel Xeon
- 8 GB RAM
- 2x73 GB Hard Disk

### **Preporučeni operativni sistemi su**

- Oracle Enterprise Linux 5
- Red Hat Enterprise LINUX 5
- NOVELL SuSE Linux Enterprise Server 10
- Windows 2003 Server Standard Edition

### **Podržani aplikacioni serveri**

- Oracle AS Standard Edition 1 ili
- Weblogic Standard Edition

### **Backup aplikacioni server**

Preporučljivo je da banka ima još jedan istovetan server kao backup ili drugi aktivni java aplikativni server.

### **Postojeći database serveri**

Kao server baze podataka podrazumeva se već postojeći bančin database server koji se koristi za potrebe core banking sistema jer on već ima rešenja za backup i disaster recovery. Sistem je testiran u radu sa sledećim database serverima:

- Oracle 10g
- MS SQL Server

## **MODULI**

Antegra SEPA Direct Debit pokriva poslove direktnog zaduženja koji se obavljaju na strani banke poverioca i banke dužnika i sastoji se od sledećih modula:

- Modul za razmenu SEPA poruka
- Modul za obradu SEPA instrukcija
- Modul za vezu sa eksternim bankarskim sistemom
- Modul za ugovore sa korisnicima direct debita
- Modul za obračun provizija
- Modul za registar mandata
- Transportni modul (obezbedjuje Udruženje banaka)

## **PLAN IMPLEMENTACIJE**

Implementacioni plan je pravljen u skladu sa planovima Udruženja banaka da se projekat direct debit uvodi u više faza, a prva faza u dva koraka. Za implementaciju prve dve faze planova Udruženja banaka napravljen je sledeći plan publikovanja verzija Antegrinog sistema direct debit:

### **Verzija 1.0**

Verzija 1.0 sistema implementiraće sledeće funkcionalnosti: razmena poruka, obrada instrukcija, veze sa eksternim bankarskim sistemom, procesiranje ugovora, obračun provizija, osnovni skup izveštaja.

- Testna verzija planirana je za 15. avgust 2008.
- Produkciona verzija planirana je za 1. septembar 2008.

### **Verzija 1.2**

Verzija 1.2 sistema implementira sledeće funkcionalnosti: registar mandata, neke od dodatnih SEPA opcionih funkcionalnosti

## **PLATFORM**

### **Java application server requirements**

The following text contains recommendations for hardware and software requirements for java application server which could support from 20 to 100 users.

### **Recommended hardware**

- Quad-Core Intel Xeon Processor or 2x Dual-Core Intel Xeon/AMD Opteron Processor or Dual-Core Intel Xeon/AMD Opteron Processor
- 8 GB RAM
- 2x73 GB Hard Disk

### **Recommended operation systems are as follows**

- Oracle Enterprise Linux 5
- Red Hat Enterprise LINUX 5
- NOVELL SuSE Linux Enterprise Server 10
- Windows 2003 Server Standard Edition

### **Supported application servers**

- Oracle AS Standard Edition 1 or
- Weblogic Standard Edition

### **Backup application server**

It is recommended that bank should have another identical server or other active java application server as a backup.

### **Existing database servers**

The database server is the one which is currently used for core banking system, since it already has solutions for backup and disaster recovery. The system was tested with the following database systems:

- Oracle 10g
- MS SQL Server

## **MODULES**

Antegra SEPA Direct Debit covers direct debit operations performed on side of creditor's bank and debtor's bank, and it consists from the following modules:

- Module for SEPA messages exchange
- Module for SEPA instructions processing
- Module for connection with external banking system
- Module for contracts with direct debit users
- Module for fee calculation
- Module for mandates registry
- Transport module (provided by Bank Association)

## **IMPLEMENTATION PLAN**

Implementation plan was created in accordance with Bank Association plans that direct debit project should be implemented in several phases, and that the first phase should be realized in two steps. For implementation of the first two phases, the following plan was created regarding Antegra Direct Debit System versioning:

### **Version 1.0**

Version 1.0 of the system should include implementation of the following functionalities: message exchange, instruction processing, links with external core banking system, contract processing, fee calculation and basic set of reports.

- Test version planned for August 15th, 2008.
- Production version planned for September 1st, 2008.

### **Version 1.2**

Version 1.2 of the system implements the following functionalities:

(izbor će zavisiti od opredeljenja Udruženja banaka), podrška za obračune dodatnih provizija, batch server, reporting server, puni skup izveštaja.

- Testna verzija planirana je za 1. decembar 2008.
- Produkciona verzija planirana je za 15. decembar 2008.

### Verzija 2.0

Verzija 2.0 sistema implementiraće B2B interfejs prema klijentima banke.

- Testna verzija planirana je za 1. mart 2009.
- Produkciona verzija planirana je za 15. mart 2009.

mandate register, some of additional SEPA optional functionalities (depending on Bank Association's selection), additional fee calculations, batch server, reporting server, complete set of reports.

- Test version planned for December 1st, 2008.
- Production version planned for December 15th, 2008.

### Version 2.0

Version 2.0 of the system shall implement B2B interfaces towards bank clients:

- Test version planned for March 1st, 2009.
- Production version planned for March 15th, 2009.

## LEGENDA FUNKCIONALNOSTI / FUNCTIONALITIES LEGEND

Debtor bank	Banka dužnika	▶
Creditor bank	Banka poverioca	▲
User Interface	User Interface	↑
Service component	Servisna komponenta	⊖
Interface to external system	Interfejs prema eksternom sistemu	↗

## INSTRUCTIONS PROCESSING / PROCESIRANJE INSTRUKCIJA

Functionalities	Funkcionalnosti	Layers	Ver 1.0	Ver 1.2
<b>COLLECTION INSTRUCTION</b>	<b>INSTRUKCIJA ZADUŽENJA</b>			
Collection instruction registration	Registracija instrukcije zaduženja	▶ ↑ ⊖	✓	
Registered Collection instruction modification	Izmena registrovane instrukcije zaduženja	▶ ↑ ⊖	✓	
Registered Collection instruction storno	Storno registrovane instrukcije zaduženja	▶ ↑ ⊖	✓	
Registered Collection instruction verification	Potvrda registrovane instrukcije zaduženja	▶ ↑ ⊖	✓	
Sending verified Collection instruction	Slanje potvrđenih instrukcija zaduženja procesoru	▶ ↑ ⊖ ↗	✓	
Receiving Collection instruction	Prijem instrukcije zaduženja	▶ ⊖ ↗	✓	
Reservation of funds required for payment after Collection instruction has been received	Rezervacija sredstava za plaćanje po prijemu instrukcije zaduženja	▶ ↑ ⊖ ↗	✓	
<b>RETURN INSTRUCTION</b>	<b>INSTRUKCIJA RETURN</b>			
Return instruction registration	Registracija instrukcije povraćaja po međubankarskoj reklamaciji	▶ ↑ ⊖	✓	
Registered Return instruction modification	Izmena registrovane instrukcije povraćaja	▶ ↑ ⊖	✓	
Registered Return instruction storno	Storno registrovane instrukcije povraćaja	▶ ↑ ⊖	✓	
Registered Return instruction verification	Potvrda registrovane instrukcije povraćaja	▶ ↑ ⊖	✓	
Sending verified Return instruction	Slanje potvrđenih instrukcija povraćaja procesoru	▶ ↑ ⊖ ↗	✓	
Receiving Return instruction	Prijem instrukcije povraćaja	▲ ⊖ ↗	✓	
Reservation of funds required for payment after Return instruction has been received	Rezervacija sredstava za plaćanje po prijemu instrukcije povraćaja	▲ ↑ ⊖ ↗	✓	
<b>REFUND INSTRUCTION</b>	<b>INSTRUKCIJA REFUND</b>			
Refund instruction registration	Registracija instrukcije povraćaja po sporazumu klijenata	▶ ↑ ⊖	✓	
Registered Refund instruction modification	Izmena registrovane instrukcije povraćaja	▶ ↑ ⊖	✓	
Registered Refund instruction storno	Storno registrovane instrukcije povraćaja	▶ ↑ ⊖	✓	
Registered Refund instruction verification	Potvrda registrovane instrukcije povraćaja	▶ ↑ ⊖	✓	

Functionalities	Funkcionalnosti	Layers	Ver 1.0	Ver 1.2
Sending verified Refund instruction	Slanje potvrđenih instrukcija povraćaja procesoru	▶ ↑ ○ /	✓	
Receiving Refund instruction	Prijem instrukcije povraćaja	▲ ○ /	✓	
Reservation of funds required for payment after Refund instruction has been received	Rezervacija sredstava za plaćanje po prijemu instrukcije povraćaja	▲ ↑ ○ /	✓	
<b>REVERSAL INSTRUCTION</b>	<b>INSTRUKCIJA REVERSAL</b>			
Reversal instruction registration	Registracija instrukcije naknadnog povraćaja	▲ ↑ ○	✓	
Registered Reversal instruction modification	Izmena registrovane instrukcije naknadnog povraćaja	▲ ↑ ○	✓	
Registered Reversal instruction storno	Storno registrovane instrukcije naknadnog povraćaja	▲ ↑ ○	✓	
Registered Reversal instruction verification	Potvrda registrovane instrukcije naknadnog povraćaja	▲ ↑ ○	✓	
Sending verified Reversal instruction	Slanje potvrđenih instrukcija naknadnog povraćaja procesoru	▲ ↑ ○ /	✓	
Receiving Reversal instruction	Prijem instrukcije naknadnog povraćaja	▶ ○ /	✓	
Reservation of funds required for payment after Reversal instruction has been received	Realizacija instrukcije naknadnog povraćaja po prijemu izvoda	▶ ↑ ○ /	✓	
<b>REJECT INSTRUCTION</b>	<b>INSTRUKCIJA REJECT</b>			
Reject instruction registration	Registracija instrukcije odbijanja	▶ ↑ ○ / ▲ ↑ ○ /	✓	
Registered Reject instruction modification	Izmena registrovane instrukcije odbijanja	▶ ↑ ○ ▲ ↑ ○	✓	
Registered Reject instruction storno	Storno registrovane instrukcije odbijanja	▶ ↑ ○ ▲ ↑ ○	✓	
Registered Reject instruction verification	Potvrda registrovane instrukcije odbijanja	▶ ↑ ○ ▲ ↑ ○	✓	
Sending verified Reject instruction	Slanje potvrđenih instrukcija odbijanja procesoru	▶ ○ ▲ ○	✓	
Processing of sent Reject instruction	Realizacija poslate instrukcije odbijanja	▶ ↑ ○ / ▲ ↑ ○ /	✓	
Processing of local Reject instruction	Realizacija lokalnih instrukcija odbijanja	▶ ↑ ○ / ▲ ↑ ○ /	✓	
Receiving Reject instruction	Prijem instrukcije odbijanja	▶ ○ ▲ ○	✓	
Processing of received Reject instruction	Realizacija primljene instrukcije odbijanja	▶ ↑ ○ / ▲ ↑ ○ /	✓	
<b>CANCEL INSTRUCTION</b>	<b>INSTRUKCIJA CANCEL</b>			
Cancel instruction registration	Registracija instrukcije opoziva	▶ ↑ ○ ▲ ↑ ○	✓	
Registered Cancel instruction modification	Izmena registrovane instrukcije opoziva	▶ ↑ ○ ▲ ↑ ○	✓	
Registered Cancel instruction storno	Storno registrovane instrukcije opoziva	▶ ↑ ○ ▲ ↑ ○	✓	
Registered Cancel instruction verification	Potvrda registrovane instrukcije opoziva	▶ ↑ ○ ▲ ↑ ○	✓	
Sending verified Cancel instruction	Slanje potvrđenih instrukcija odbijanja opoziva	▶ ○ ▲ ○	✓	
Processing of sent Cancel instruction	Realizacija poslate instrukcije opoziva	▶ ↑ ○ / ▲ ↑ ○ /	✓	
Processing of local Cancel instruction	Realizacija lokalnih instrukcija opoziva	▶ ↑ ○ / ▲ ↑ ○ /	✓	

Functionalities	Funkcionalnosti	Layers	Ver 1.0	Ver 1.2
Receiving Cancel instruction	Prijem instrukcije opoziva	▶ ( ) ▲ ( )	✓	
Processing of received Cancel instruction	Realizacija primljene instrukcije opoziva	▶ ↑ ( ) ↗ ▲ ↑ ( ) ↗	✓	

## MESSAGE PROCESSING / PROCESIRANJE PORUKA

Functionalities	Funkcionalnosti	Layers	Ver 1.0	Ver 1.2
<b>MESSAGES</b>	<b>PORUKE</b>			
Sending internal messages	Slanje internih poruka	▶ ( ) ▲ ( )	✓	
Sending external messages	Slanje eksternih poruka	▶ ( ) ▲ ( )	✓	
Receiving internal messages	Prijem internih poruka	▶ ( ) ▲ ( )	✓	
Receiving external messages	Prijem eksternih poruka	▶ ( ) ▲ ( )	✓	
Processing ACK/NACK message from transport layer	Prijem ACK/NACK poruke sa transportnog nivoa	▶ ( ) ▲ ( )	✓	
<b>CREATION AND PARSING OF MANDATE MESSAGES</b>	<b>KREIRANJE I PARSIRANJE PORUKA O MANDATIMA</b>			
Message for mandate and annex to mandate recording (Evidence mandate), SerbianMandateEvidence, mndt.021.001.01	Poruka za evidentiranje mandata i aneksa mandata (Evidence mandate), SerbianMandateEvidence, mndt.021.001.01	▶ ( ) ▲ ( )		✓
Message regarding mandate status (Update mandate status, Query mandate status), SerbianMandateStatus, mndt.003.001.01	Poruka za status mandata (Update mandate status, Query mandate status), SerbianMandateStatus, mndt.003.001.01	▶ ( ) ▲ ( )		✓
Query message on existing mandates, SerbianMandateQuery, mndt.004.001.01	Poruka upit o postojećim mandatima, SerbianMandateQuery, mndt.004.001.01	▶ ( ) ▲ ( )		✓
Message for mandate verification (Verify mandate), SerbianMandateVerification, mndt.005.001.01	Poruka za verifikaciju mandata (Verify mandate), SerbianMandateVerification, mndt.005.001.01	▶ ( ) ▲ ( )		✓
Message responding to query on existing mandates (Query response), SerbianMandateResponse, mndt.006.001.01	Poruka odgovor na upit o postojećim mandatima (Query response), SerbianMandateResponse, mndt.006.001.01	▶ ( ) ▲ ( )		✓
<b>PACS MESSAGES CREATION AND PARSING</b>	<b>KREIRANJE I PARSIRANJE PACS PORUKA</b>			
Message with collection instruction – Collection, SerbianDirectDebitCollection, pacs.003.002.02	Poruka sa instrukcijama za naplatu – Collection, SerbianDirectDebitCollection, pacs.003.002.02	▶ ( ) ▲ ( )	✓	
Return messages – Return, SerbianDirectDebitReturn, pacs.004.002.02	Poruke za povraćaj – Return, SerbianDirectDebitReturn, pacs.004.002.02	▶ ( ) ▲ ( )	✓	
Return messages – Refund, SerbianDirectDebitReturn, pacs.004.002.02	Poruke za povraćaj – Refund, SerbianDirectDebitReturn, pacs.004.002.02	▶ ( ) ▲ ( )	✓	
Return messages – Reversal, SerbianDirectDebitReversal, pacs.007.002.02	Poruka za naknadni povraćaj – Reversal, SerbianDirectDebitReversal, pacs.007.002.02	▶ ( ) ▲ ( )	✓	
Message rejecting collection instructions – Reject, SerbianDirectDebitReject, pacs.002.002.02	Poruka za instrukciju odbijanja – Reject, SerbianDirectDebitReject, pacs.002.002.02	▶ ( ) ▲ ( )	✓	
<b>CREATION AND PARSING OF FREE FORMAT MESSAGES</b>	<b>KREIRANJE I PARSIRANJE PORUKA SLOBODNOG FORMATA</b>			
Message cancelling collection instruction, SerbianFreeComplexCancel, free.009.001.01	Poruka za opoziv instrukcije, SerbianFreeComplexCancel, free.009.001.01	▶ ( ) ▲ ( )	✓	
Message verifying payment instructions, SerbianFreeConfirmation, free.009.002.01	Poruka potvrde instrukcije plaćanja, neto pozicija, SerbianFreeConfirmation, free.009.002.01	▶ ( ) ▲ ( )	✓	
Statement message, SerbianFreeFiToFiStatement, free.009.003.01	Poruka izvod, SerbianFreeFiToFiStatement, free.009.003.01	▶ ( ) ▲ ( )	✓	
Limit setting message, SerbianFreeComplexLimit, free.009.004.01	Poruka za postavljanje limita, SerbianFreeComplexLimit, free.009.004.01	▶ ( ) ▲ ( )	✓	

## INTERFACE TO CORE BANKING / CORE BANKING INTERFEJS

Functionalities	Funkcionalnosti	Layers	Ver 1.0	Ver 1.2
<b>CBS INTERFACE FOR BANK, COUNTRIES AND CURRENCIES</b>	<b>CBS INTERFEJS ZA BANKU, ZEMLJE I VALUTE</b>			
Control if BIC exists	Provera postojanja BIC koda	▶ ( ) ▲ ( )	✓	
Control if bank organization unit exists	Provera postojanja organizacione jedinice banke	▶ ( ) ▲ ( )	✓	
Control in country code exists	Provera postojanja koda zemlje	▶ ( ) ▲ ( )	✓	
Control if currency mark exists	Provera postojanja oznake valute	▶ ( ) ▲ ( )	✓	
List of country codes	Lista kodova zemalja	▶ ( ) ▲ ( )	✓	
List of currency marks	Lista oznaka valuta	▶ ( ) ▲ ( )	✓	
List of bank organization units	Lista organizacionih jedinica banke	▶ ( ) ▲ ( )	✓	
<b>CBS INTERFACE FOR CLIENTS</b>	<b>CBS INTERFEJS ZA KOMITENTE</b>			
Control if client exists based on ID number	Provera postojanja klijenta na osnovu matičnog broja	▶ ( ) ▲ ( )	✓	
Obtaining data on clients based on their name	Dohvaćanje podataka o klijentima na osnovu imena	▶ ( ) ▲ ( )	✓	
Obtaining data on clients based on their ID number	Dohvaćanje podataka o klijentu na osnovu matičnog broja	▶ ( ) ▲ ( )	✓	
<b>CBS INTERFACE FOR CLIENTS' ACCOUNTS</b>	<b>CBS INTERFEJS ZA RAČUNE KLIJENATA</b>			
Control if account exists	Provera postojanja računa	▶ ( ) ▲ ( )	✓	
List of user's accounts	Lista računa za korisnika	▶ ( ) ▲ ( )	✓	
Account holder	Vlasnik računa	▶ ( ) ▲ ( )	✓	
Control if account is active	Provera da li je račun aktivan	▶ ( ) ▲ ( )	✓	
Funds provisioning	Rezervacija sredstava	▶ ( ) ▲ ( )	✓	
Provision cancelling	Poništavanje rezervacije	▶ ( ) ▲ ( )	✓	
Description of reservation	Vrati opis rezervacije	▶ ( ) ▲ ( )		✓
Description of booking	Vrati opis knjiženja	▶ ( ) ▲ ( )		✓
Description of domestic payment order	Vrati opis naloga platnog prometa	▶ ( ) ▲ ( )		✓
<b>CBS INTERFACE FOR CONTRACTS</b>	<b>CBS INTERFEJS ZA UGOVORE</b>			
Contract opening	Otvaranje ugovora	▶ ( ) ▲ ( )	✓	
Annex to contract	Aneks ugovora	▶ ( ) ▲ ( )	✓	
Contract cancellation	Gašenje ugovora	▶ ( ) ▲ ( )	✓	
<b>CBS INTERFACE FOR ACTIONS TAKEN AFTER INSTRUCTIONS HAVE BEEN SENT AND RECEIVED (BOOKING)</b>	<b>CBS INTERFEJS ZA AKCIJE PO PRIJEMU I SLANJU INSTRUKCIJA (KNJIŽENJE)</b>			
Collection instruction sending	Slanje Collection instrukcije	▶ ( ) ▲ ( )	✓	
Collection instructions receipt	Prijem Collection instrukcije	▶ ( ) ▲ ( )	✓	
Cancel instruction sending for Collection	Slanje Cancel instrukcije za Collection	▶ ( ) ▲ ( )	✓	
Cancel instruction receipt for Collection	Prijem Cancel instrukcije za Collection	▶ ( ) ▲ ( )	✓	
Reject instruction sending for Collection	Slanje Reject instrukcije za Collection	▶ ( ) ▲ ( )	✓	
Reject instruction receipt for Collection	Prijem Reject instrukcije za Collection	▶ ( ) ▲ ( )	✓	
Return instruction sending	Slanje Return instrukcije	▶ ( ) ▲ ( )	✓	
Return instruction receipt	Prijem Return instrukcije	▶ ( ) ▲ ( )	✓	
Cancel instructions sending for Return	Slanje Cancel instrukcije za Return	▶ ( ) ▲ ( )	✓	
Cancel instruction receipt for Return	Prijem Cancel instrukcije za Return	▶ ( ) ▲ ( )	✓	
Reject instruction sending for Return	Slanje Reject instrukcije za Return	▶ ( ) ▲ ( )	✓	

Functionalities	Funkcionalnosti	Layers	Ver 1.0	Ver 1.2
Reject instruction receipt for Return	Prijem Reject instrukcije za Return	▶ ◯ ▲ ◯	✓	
Reversal instruction sending	Slanje Reversal instrukcije	▶ ◯ ▲ ◯	✓	
Reversal instruction receipt	Prijem Reversal instrukcije	▶ ◯ ▲ ◯	✓	
Cancel instruction sending for Reversal	Slanje Cancel instrukcije za Reversal	▶ ◯ ▲ ◯	✓	
Cancel instruction receipt for Reversal	Prijem Cancel instrukcije za Reversal	▶ ◯ ▲ ◯	✓	
Reject instruction sending for Reversal	Slanje Reject instrukcije za Reversal	▶ ◯ ▲ ◯	✓	
Reject instruction receipt for Reversal	Prijem Reject instrukcije za Reversal	▶ ◯ ▲ ◯	✓	
<b>CBS INTERFACE FOR BOOKING AFTER STATEMENT HAS BEEN RECEIVED</b>	<b>CBS INTERFEJS ZA RASKNJIŽAVANJA PO PRIJEMU IZVODA (REALIZACIJA)</b>			
Sent Collection instruction	Poslata Collection instrukcija	▶ ◯ ▲ ◯	✓	
Received Collection instruction	Primljena Collection instrukcija	▶ ◯ ▲ ◯	✓	
Sent Return instruction	Poslata Return instrukcija	▶ ◯ ▲ ◯	✓	
Received Return instruction	Primljena Return instrukcija	▶ ◯ ▲ ◯	✓	
Sent Reversal instruction	Poslata Reversal instrukcija	▶ ◯ ▲ ◯	✓	
Received Reversal instruction	Primljena Reversal instrukcija	▶ ◯ ▲ ◯	✓	
Sent Collection instruction, statement error	Poslata Collection instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Received Collection instruction, statement error	Primljena Collection instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Sent Return instruction, statement error	Poslata Return instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Received Return instruction, statement error	Primljena Return instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Sent Reversal instruction, statement error	Poslata Reversal instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Received Reversal instruction, statement error	Primljena Reversal instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
<b>CBS INTERFACE FOR FUNDS TRANSFER AFTER STATEMENT HAS BEEN RECEIVED</b>	<b>CBS INTERFEJS ZA PRENOS SREDSTAVA PO REZERVACIJI</b>			
Sent Collection instruction	Poslata Collection instrukcija	▶ ◯ ▲ ◯	✓	
Received Collection instruction	Primljena Collection instrukcija	▶ ◯ ▲ ◯	✓	
Sent Return instruction	Poslata Return instrukcija	▶ ◯ ▲ ◯	✓	
Received Return instruction	Primljena Return instrukcija	▶ ◯ ▲ ◯	✓	
Sent Reversal instruction	Poslata Reversal instrukcija	▶ ◯ ▲ ◯	✓	
Received Reversal instruction	Primljena Reversal instrukcija	▶ ◯ ▲ ◯	✓	
Sent Collection instruction, statement error	Poslata Collection instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Received Collection instruction, statement error	Primljena Collection instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Sent Return instruction, statement error	Poslata Return instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Received Return instruction, statement error	Primljena Return instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Sent Reversal instruction, statement error	Poslata Reversal instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
Received Reversal instruction, statement error	Primljena Reversal instrukcija, greška u izvodu	▶ ◯ ▲ ◯	✓	
<b>FEE BOOKINGS</b>	<b>KNJIŽENJA PROVIZIJA</b>			
Booking of fee for payment order receipt	Knjiženje provizije za prijem zahteva za plaćanje	▶ ◯ ▲ ◯	✓	
Booking of fee for order realization	Knjiženje provizije za realizaciju naloga	▶ ◯ ▲ ◯	✓	
Booking of fee for report on debtor's due liabilities	Knjiženje provizije za izveštaj o dospelim obavezama za dužnika	▶ ◯ ▲ ◯		✓
Booking of fee for contract opening	Knjiženje provizije za otvaranje ugovora	▶ ◯ ▲ ◯	✓	
Booking of fee for annex creation to a contract	Knjiženje provizije za aneksiranje ugovora	▶ ◯ ▲ ◯	✓	

## SECURITY / BEZBEDNOST

Functionalities	Funkcionalnosti		Ver 1.0	Ver 1.2
<b>SECURITY MEASURES</b>	<b>BEZBEDNOSNE MERE</b>			
Privileges and access rights	Privilegije i prava pristupa		✓	
Roles	Role		✓	
Four eyes principle application	Primena principa četvero očiju		✓	
Audit log	Audit log		✓	
Protection of sensitive data	Zaštita osetljivih podataka		✓	
Archiving	Arhiviranje		✓	

## OTHER FUNCTIONALITIES / OSTALE FUNKCIONALNOSTI

Functionalities	Funkcionalnosti		Ver 1.0	Ver 1.2
Mandates	Mandati			✓
Limits	Limiti		✓	
Statement	Izvod		✓	
Contracts	Ugovori		✓	
Price lists	Cenovnici		✓	
Fee calculations	Obračun provizija		✓	
Start and end of a day	Početak i kraj dana		✓	
Searches	Pretrage		✓	
Parametrisation	Parametrizacija		✓	✓
Codebooks	Šifarnici		✓	
Multilanguage	Multijezičnost		✓	
Scheduler	Scheduler		✓	
Reports	Izveštaji			✓
Batch server	Batch server			✓
Reporting server	Reporting server			✓
Connecting to external document management system	Povezivanje sa dms-om			

We assist our customers to maximize business opportunities and increase their competitive advantage, by implementing integrated leading edge banking system that continuously accommodates to their newest requirements. We create a comfortable and comprehensive work environment for our employees so that they can achieve their professional and personal goals.

We provide high quality, reliable solutions which take into consideration the customer's potential for future growth and development. We keep our staff highly trained and up to date with new technologies. We have our own implementation methodology to expedite software development and ensure high quality of developed solutions and documentation. We revise current business processes and implement best practices as we encountered in our different projects and implementations.

# ANTEGRA

INFORMATION SYSTEMS



MEMBER OF  
**GSSECO**  
GROUP

Bulevar Vojvode Mišića 37-39  
11000 Belgrade, Serbia  
tel: + 381 11 20 68 900  
fax: + 381 11 20 68 901  
e-mail: [info@antegra.com](mailto:info@antegra.com)  
[www.antegra.com](http://www.antegra.com)

MEMBER OF  
**GSSECO**  
GROUP

Goce Delčeva 44  
11070 New Belgrade, Serbia  
Tel: +381 11 20 13 111  
Fax: +381 11 30 15 132  
e-mail: [office@pexim.net](mailto:office@pexim.net)  
[www.pexim.net](http://www.pexim.net)