

# **Aplikativni sustav za trgovanje električnom energijom**

**Patrik Franković**

**Roland Miklić**

**Zoran Frlan**

**Sektor za informatiku i telekomunikacije**



# Sadržaj

- O projektu
- Izbor tehnologije
- Realizacija
- Izdvojeni primjeri
- Umjesto zaključka

## Shema HEP grupe

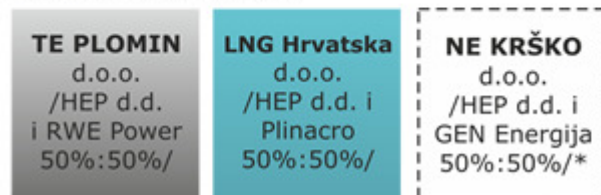
vladajuće društvo



ovisna društva u 100% vlasništvu



društva u 50% vlasništvu



\* izvan HEP grupe

○ HEP Trgovina

električar

posrednik

○ Otvoreni

podaje

trgovinskog

# Ukratko o projektu

- *Aplikativno rješenje za praćenje poslovanja postojećih i mogućih novih inozemnih ureda HEP Trgovine vezanih uz trgovinu električne energije*
- Praćenje ugovora za trgovanje električnom energijom
- Praćenje kapaciteta po bilančnim grupama
- Prijava vozni redova po bilančnim grupama
- Učitavanje rezultata aukcija
- B2B komunikacija s operatorima sustava, tržišta, aukcijskim kućama

# Zahtjevi

- 24/7
- Moderno web rješenje
- Korisnici aplikacije su mahom mladi inženjeri koji imaju visoke zahtjeve i očekivanja u pogledu dizajna i korištenja aplikacije
- B2B komunikacija s automatiziranim sustavima koji „ne praštaju”: email, xml, web servisi

# Izbor tehnologije

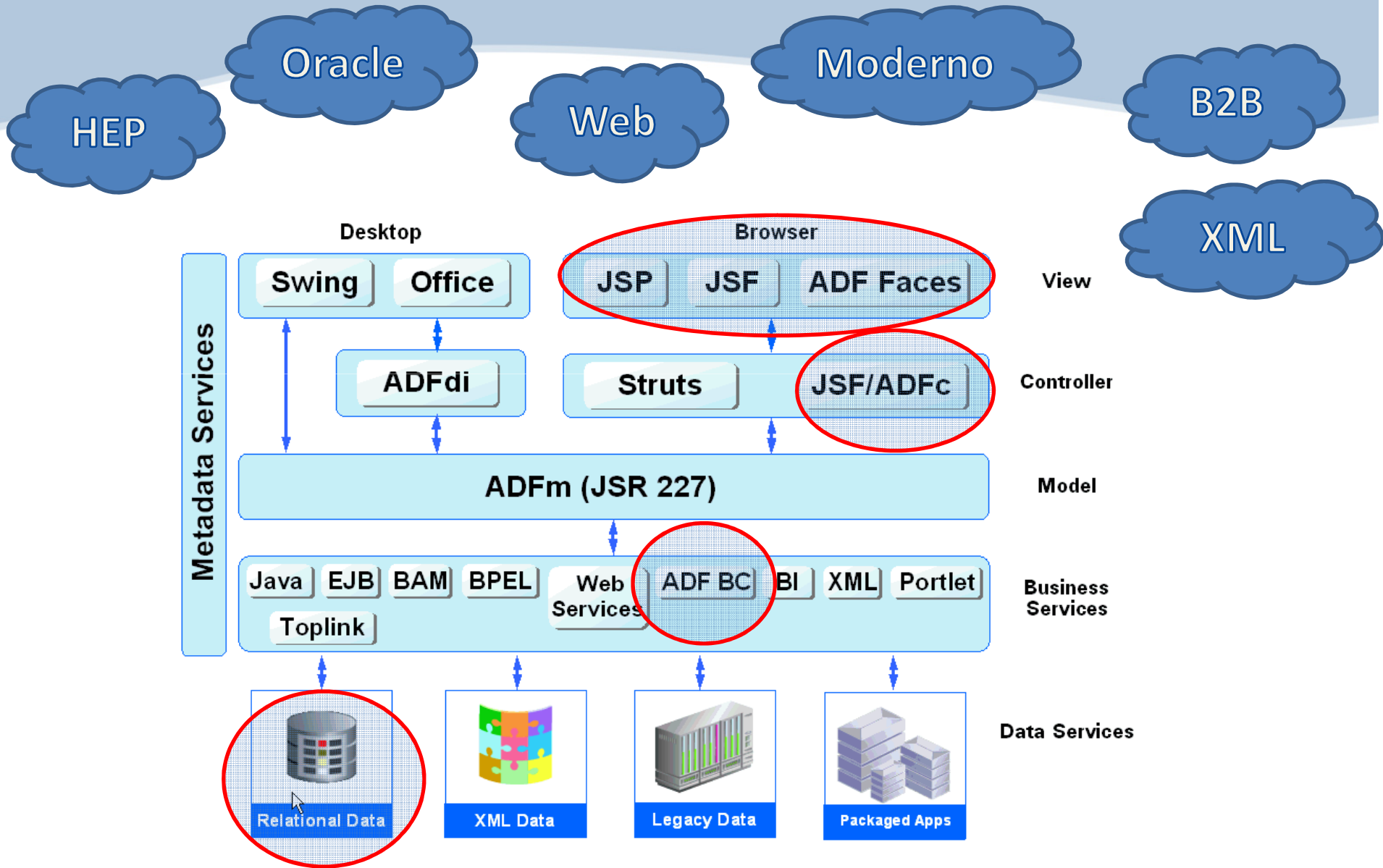
## Aplikacija

Unos i obrada podataka  
(web modul)

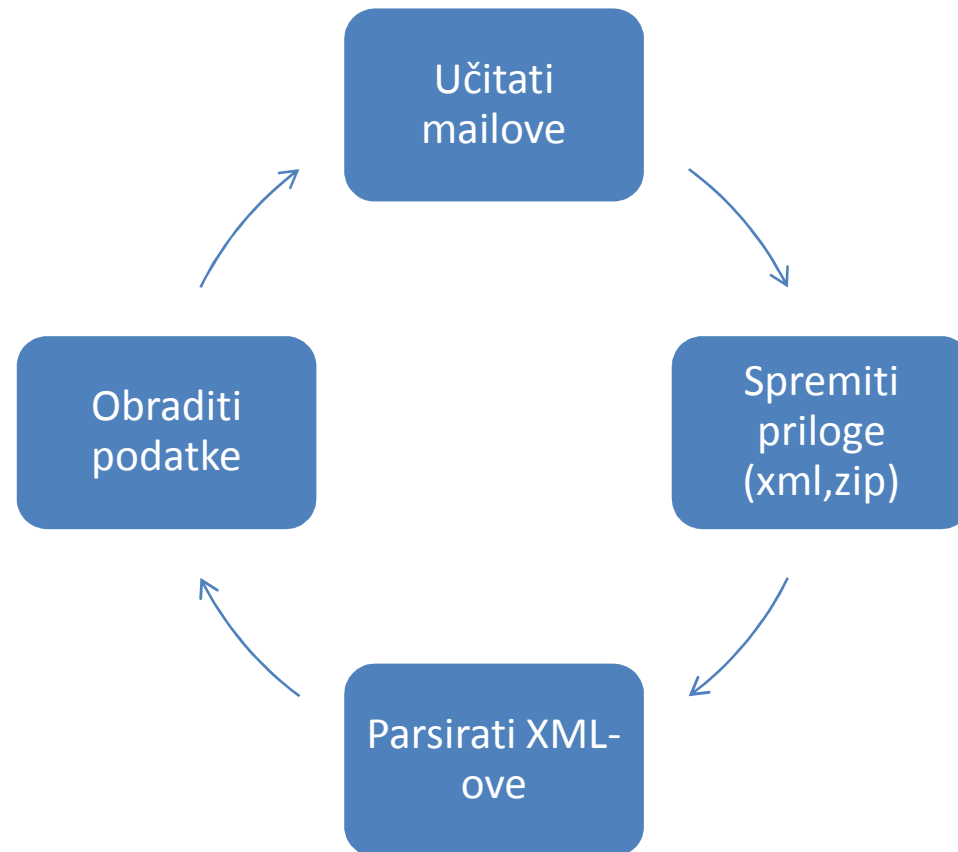
B2B  
Email/XML  
management  
(mail modul)

Baza podataka  
(db modul)

# Web modul



# Mail modul





# Mail modul - SWOT matrica

## Strengths

PL/SQL  
Upravljanje bazom  
.NET  
XML upravljanje

## Weaknesses

Slabije poznavanje Jave  
Neiskustvo u dohvat i obradi mailova

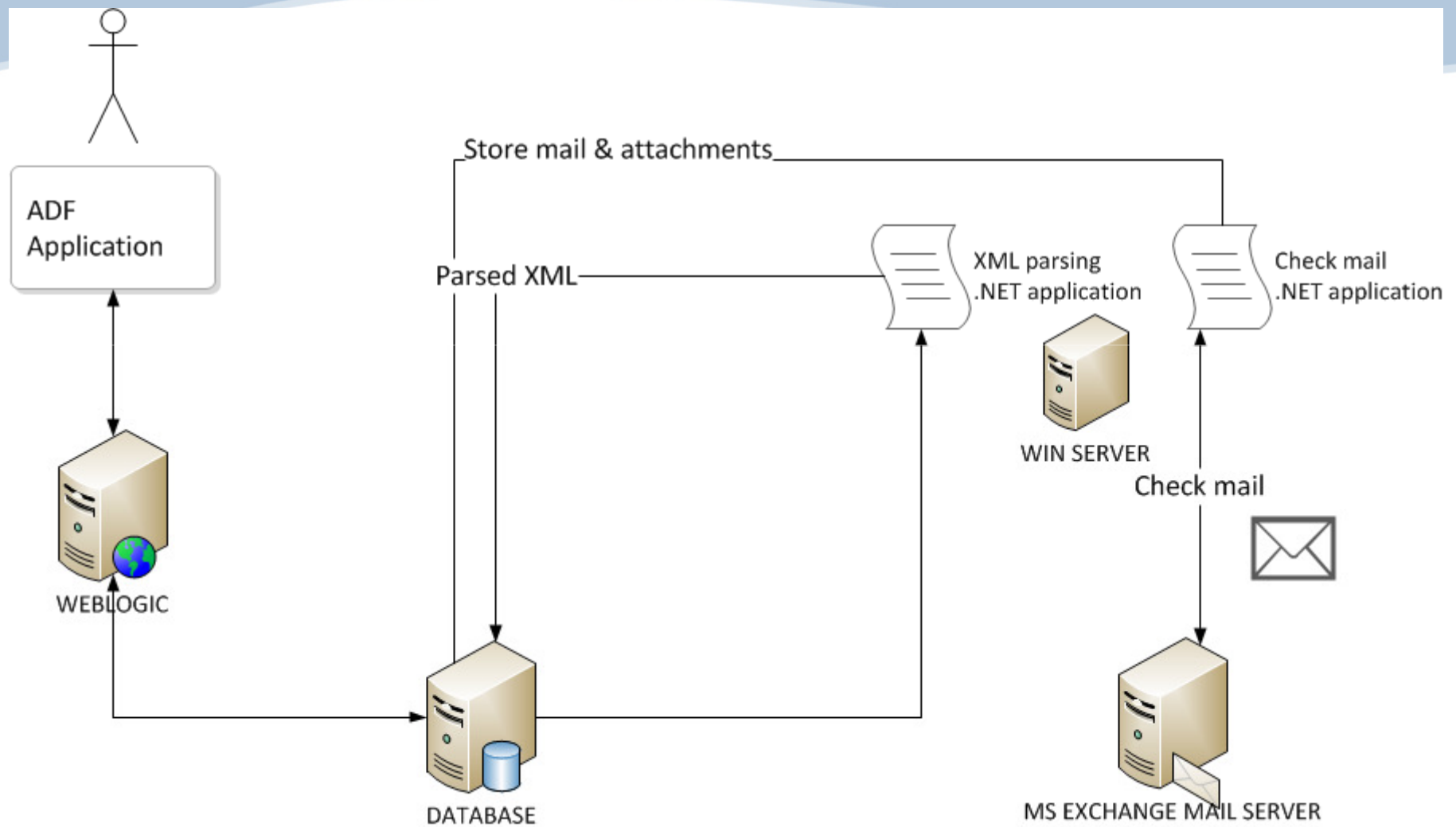
## Opportunities

Infrastruktura  
Poslovni proces  
Dostupnost svih sistemskih informacija

## Threats

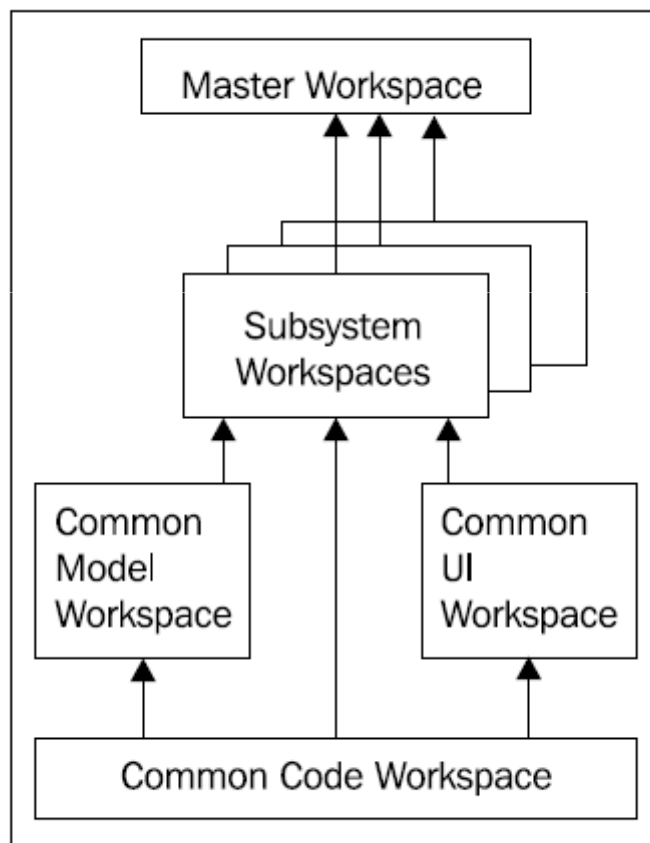
Weblogic  
XML formati  
Mail server failor  
Mail certifikati

# Mail modul - konačno rješenje

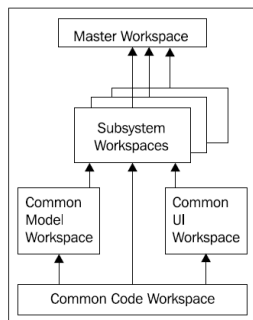
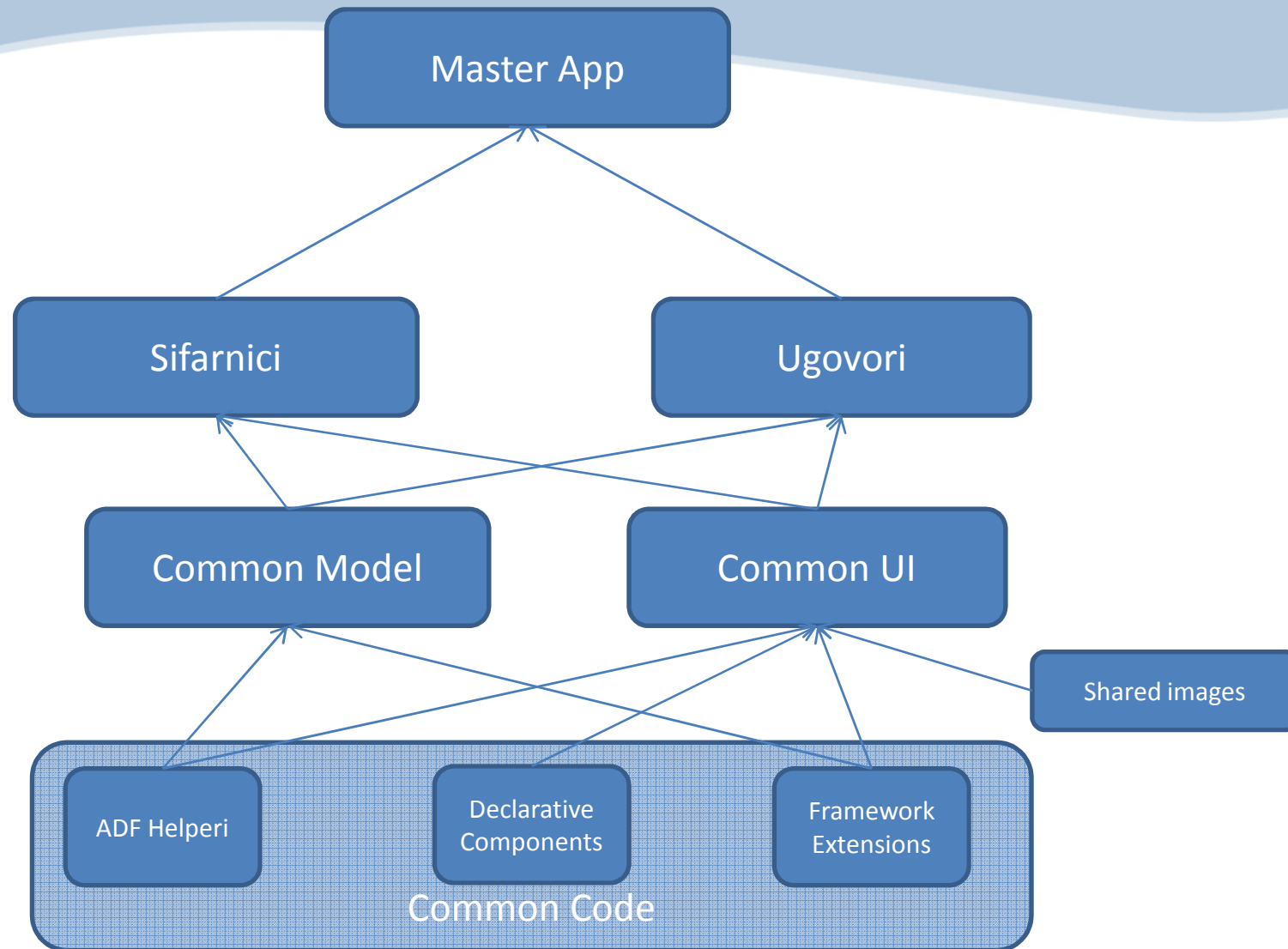


# ADF struktura

- ADF struktura aplikacije je izvedena prema preporuci iz knjige Stena Vesterlia „Oracle ADF Enterprise Application Development—Made Simple”.



# ADF struktura



# UI

- ADF Visio stencils
- Default izgled komponenti – no custom css
- Tab navigacija
- Velik izbor kontrola – „od šume se često ne vidi stablo”
- Zahtjevi korisnika
  - svaki ured zasebna cjelina, ali sa prikazom zajedničkih funkcionalnosti koje se odnose na sve
  - Insert/Edit operacije u popup prozoru
  - Razni zahtjevi iz vremena desktop aplikacije (funkcijske tipke)

# UI

**Header – Osnovni parametri, korisničke postavke, menu**

**Tab/Sub Tab navigacija**

**Radni dio**

**Business/System messages**

**Header Information:** HEP TRGOVINA 0.0.0 | Izbornik | 10.10.2012 | pfrankovic

**Navigation:** Početna | Slovenija | Mađarska | Srbija | Hrvatska | Postavke

**Toolbar:** View | Status | Osvježi | Edit stavke | Nova stavka | Razdijeli stavku | Novi ugovor | Edit ugovora | Briši stavku | Provjeri vozni red | Prijavi vozni red | Detach

StatusStavke	Osnova	Ugovor	Partner	OznakaGrance	Kapacitet	Količna	Cijena	Stavka	Trajanje ugovora		Trajanje stavke		Pon
									UgoDatOd	UgoDatDo	DatumOd	DatumDo	
OK	K	25092012/1-M	EGL	AT-SLO	PTR-YB--12----	120	46.75	1	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/1-M	EGL	AT-SLO	PTR-MB--1210---	120	46.75	3	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/3-M	EZPADA	AT-SLO	PTR-MB--1210---	240	46.85	1	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/4-M	Alpiq Energy SE	AT-SLO	PTR-MB--1210---	480	46.94	1	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	P	25092012/8-T	HEP d.d.	SLO-HR	HR_S1HR_Y_3IX-HEP-DD-----9_32228	960	53.25	1	08.10.2012.	14.10.2012.	08.10.2012.	14.10.2012.	✓
OK	P	25092012/8-T	HEP d.d.	SLO-HR	HR_S1HR_Y_3IX-HEP-DD-----9_32228	960	53.5	2	08.10.2012.	14.10.2012.	08.10.2012.	14.10.2012.	✓
OK	K	04102012/1-T	EZPADA	AT-SLO	PTR-MB--1210---	120	47.15	1	08.10.2012.	14.10.2012.	08.10.2012.	14.10.2012.	✓

**Pregled po satima** | Grafički pregled

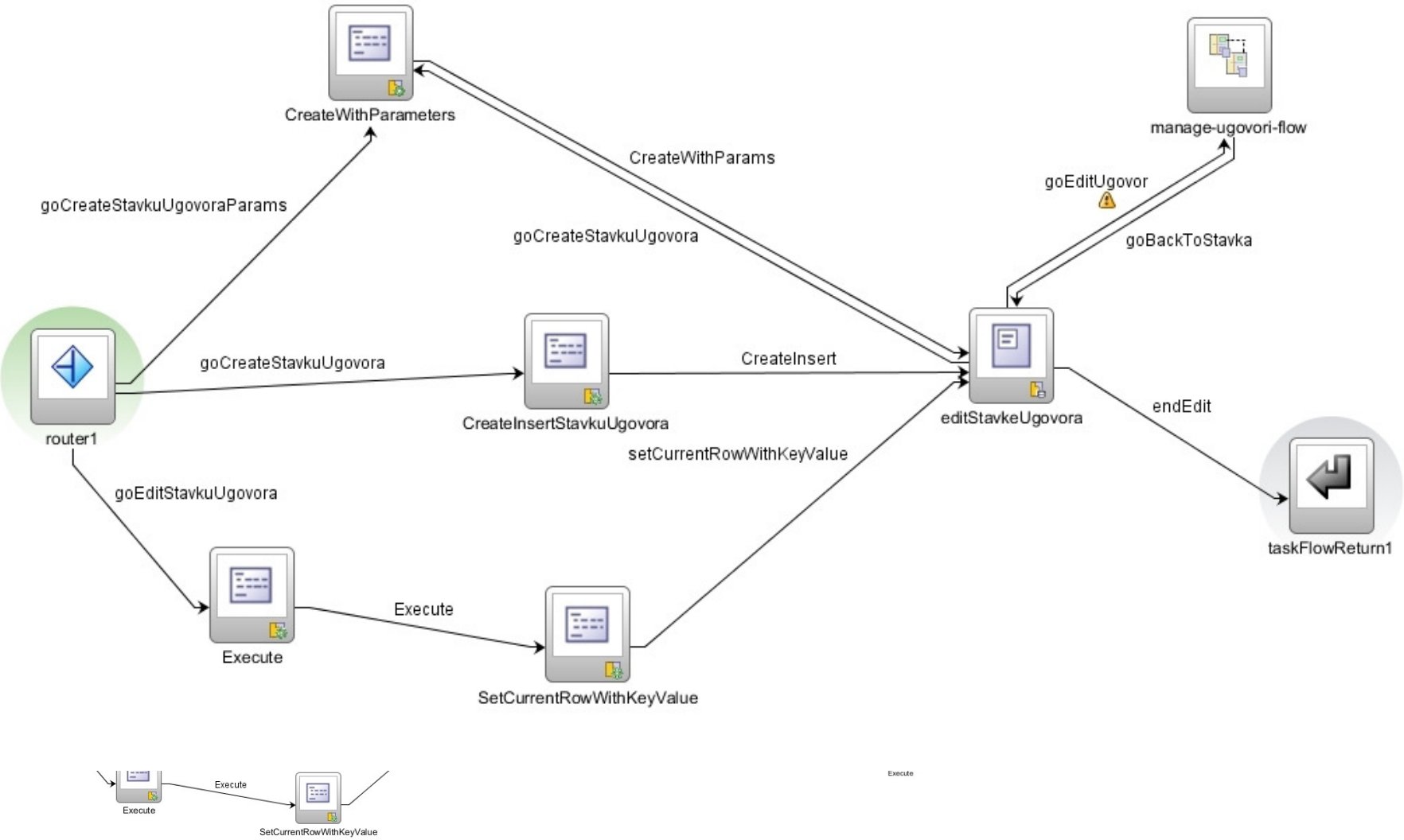
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Ukupno	Prosjeak	
Količna	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	120	5
Cijena	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	1122	46,75
Vrijednost	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	5610,00	233,75

**Business messages**

Name	Datesent	ReceivedFrom	ReasonCod/ReasonCodeDefinition	Description
RightsDocument	09.10.2012. 08:03:07	Marin.Cerjan@hep.hr		
ConfirmationReport	09.10.2012. 08:03:04	Marin.Cerjan@hep.hr	A06 Schedule accepted	The schedule of the recipient as presented has been completely accepted
ConfirmationReport	09.10.2012. 08:01:04	Marin.Cerjan@hep.hr		
AnomalyReport	09.10.2012. 08:01:00	Marin.Cerjan@hep.hr		The invoice and/or price that has been series has not got a counterpart time series. In the case of an Intermediate Confirmation Report this is advis...
AnomalyReport	09.10.2012. 08:00:28	Marin.Cerjan@hep.hr		
AcknowledgementMessage	09.10.2012. 07:36:38	HEP-OPS.schedule@hep.hr	A01 Message fully accepted	The message has been fully accepted for application processing
AcknowledgementMessage	09.10.2012. 07:36:37	HEP-OPS.schedule@hep.hr	A01 Message fully accepted	The message has been fully accepted for application processing
AcknowledgementMessage	09.10.2012. 07:36:36	Marin.Cerjan@hep.hr	A01 Message fully accepted	The message has been fully accepted for application processing

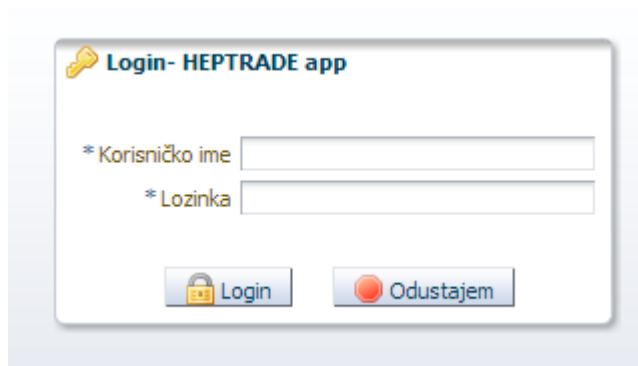
# Poslovna logika

Bounded Task Flow



# Security

- Autentikacija je provedena kroz HEP Active Directory
- Autorizacija je implementirana kroz poslovnu logiku i korišteno je vlastito rješenje.

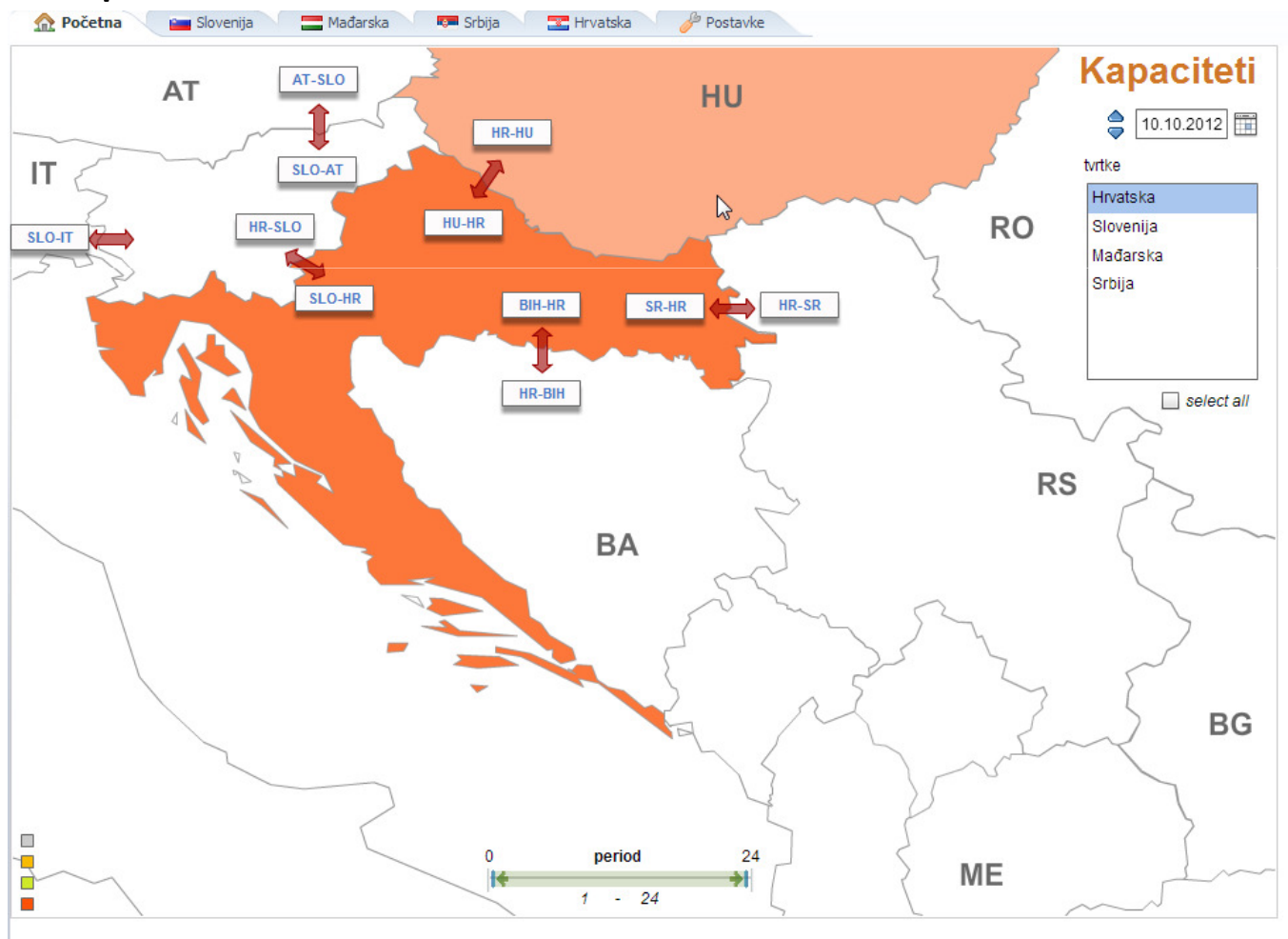


The image shows a login form for the HEPTRADE app. At the top left, there is a yellow key icon followed by the text "Login- HEPTRADE app". Below this, there are two input fields: the first is labeled "\* Korisničko ime" and the second is labeled "\* Lozinka". At the bottom of the form, there are two buttons: "Login" with a yellow padlock icon and "Odustajem" with a red circle icon.



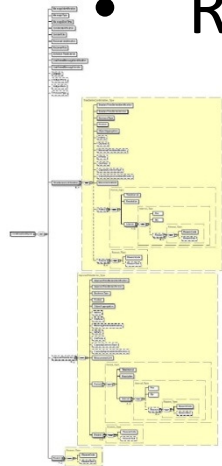
# Multimedia

- Početna stranica web aplikacije je zapravo Adobe Flex aplikacija implementirana u ADF sučelje putem komponente af:inlineFrame

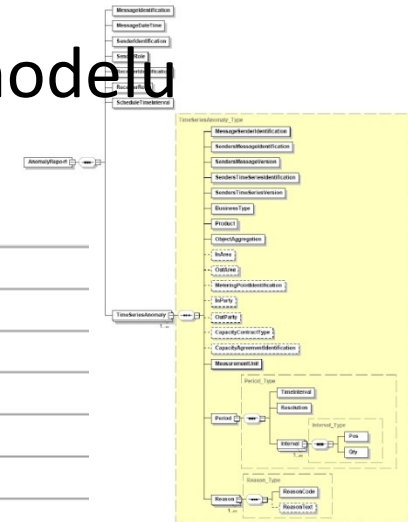


# Izdvojeno rješenje

- Problem različitih XML datoteka s različitim modelima
- Rješenje pronađeno u „breadcrumbs” modelu



AcknowledgementDocument	
AcknowledgementDocument.DocumentIdentification	20120216_ACK_0000000052
AcknowledgementDocument.DocumentDateTime	2012-02-16T11:03:03Z
AcknowledgementDocument.SenderIdentification	10XSI-ELES-----1
AcknowledgementDocument.SenderRole	A04
AcknowledgementDocument.ReceiverIdentification	28XHEP-TRADE---7
AcknowledgementDocument.ReceiverRole	A08
AcknowledgementDocument.ReceivingDocumentIdentification	20120217_BRS_HEP-TRGOVINA_114027
AcknowledgementDocument.ReceivingDocumentVersion	2
AcknowledgementDocument.ReceivingDocumentType	A01
AcknowledgementDocument.DateTimeReceivingDocument	2012-02-16T11:03:03Z
AcknowledgementDocument.Reason	
AcknowledgementDocument.Reason.ReasonCode	A01



# LIVE DEMO

HEP TRGOVINA d.o.o. Izbornik 10.10.2012 pfrankovic

Početna Slovenija Mađarska Srbija Hrvatska Postavke

Vozni red za 10.10.2012 v.1 statusa ACK Ugovori Kapaciteti Pregled raspoloživosti kapaciteta Pregled ostvarenja

View Status Osveži Edit stavke Nova stavka Razdijeli stavku Novi ugovor Edit ugovora Briši stavku Provjeri vozni red Prijavi vozni red Detach

StatusStavke	Osnova	Ugovor	Partner	OznakaGranice	Kapacitet	Količina	Cijena	Stavka	Trajanje ugovora		Trajanje stavke		Pon
									UgoDatOd	UgoDatDo	DatumOd	DatumDo	
OK	K	25092012/1-M	EGL	AT-SLO	PTR-YB--12-----1322658155299-1294	120	46.75	1	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/1-M	EGL	AT-SLO	PTR-MB--1210---1347358513274-0096	240	46.85	2	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/1-M	EGL	AT-SLO	PTR-MB--1210---1347358513274-0096	120	46.75	3	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/3-M	EZPADA	AT-SLO	PTR-MB--1210---1347358513274-0096	240	46.85	1	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	K	25092012/4-M	Alpiq Energy SE	AT-SLO	PTR-MB--1210---1347358513274-0096	480	46.94	1	01.10.2012.	31.10.2012.	01.10.2012.	31.10.2012.	✓
OK	P	25092012/8-T	HEP d.d.	SLO-HR	HR_SIHR_Y_3IX-HEP-DD-----9_32228	1200	53.25	1	08.10.2012.	14.10.2012.	08.10.2012.	14.10.2012.	✓
OK	P	25092012/8-T	HEP d.d.	SLO-HR	HR_SIHR_Y_3IX-HEP-DD-----9_32228	960	53.5	2	08.10.2012.	14.10.2012.	08.10.2012.	14.10.2012.	✓

Pregled po satima Grafički pregled

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Ukupno	Prosjek	
Količina	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	120	5
Cijena	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	46,75	1122	46,75	
Vrijednost	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	233,75	5610,00	233,75	

	Name	Datesent	ReceivedFrom	ReasonCod	ReasonCodeDefinition	Description
✉	RightsDocument	09.10.2012. 08:03:07	Marin.Cerjan@hep.hr			
✉	ConfirmationReport	09.10.2012. 08:03:04	Marin.Cerjan@hep.hr	A06	Schedule accepted	The schedule of the recipient as presented has been completely accepted
✉	ConfirmationReport	09.10.2012. 08:01:04	Marin.Cerjan@hep.hr			
✉	AnomalyReport	09.10.2012. 08:01:00	Marin.Cerjan@hep.hr	A28	Counterpart time series missing	This provides an indication that the time series has not got a counterpart time series. In the case of anIntermediate Confirmation Report this is advisi...
✉	AnomalyReport	09.10.2012. 08:00:28	Marin.Cerjan@hep.hr			
✉	AcknowledgementMessage	09.10.2012. 07:36:38	HEP-OPS.schedule@hep.hr	A01	Message fully accepted	The message has been fully accepted for application processing
✉	AcknowledgementMessage	09.10.2012. 07:36:37	HEP-OPS.schedule@hep.hr	A01	Message fully accepted	The message has been fully accepted for application processing
✉	AcknowledgementMessage	09.10.2012. 07:36:36	Marin.Cerjan@hep.hr	A01	Message fully accepted	The message has been fully accepted for application processing

Business messages System messages

Za HEP Trgovinu Izradilo Sektor za informatiku i telekomunikacije

Pitanja?

**Hvala!**

Patrik.Frankovic@hep.hr

Roland.Miklic@hep.hr

Zoran.Frlan@hep.hr

