



PREDMET: SE201 UVOD U SOFTVERSKO INŽENJERSTVO

PREDAVANJE BR. 7

OSNOVE, ELICITACIJA I VALIDACIJA ZAHTEVA

PRIMER ZA VEŽBU BR.7

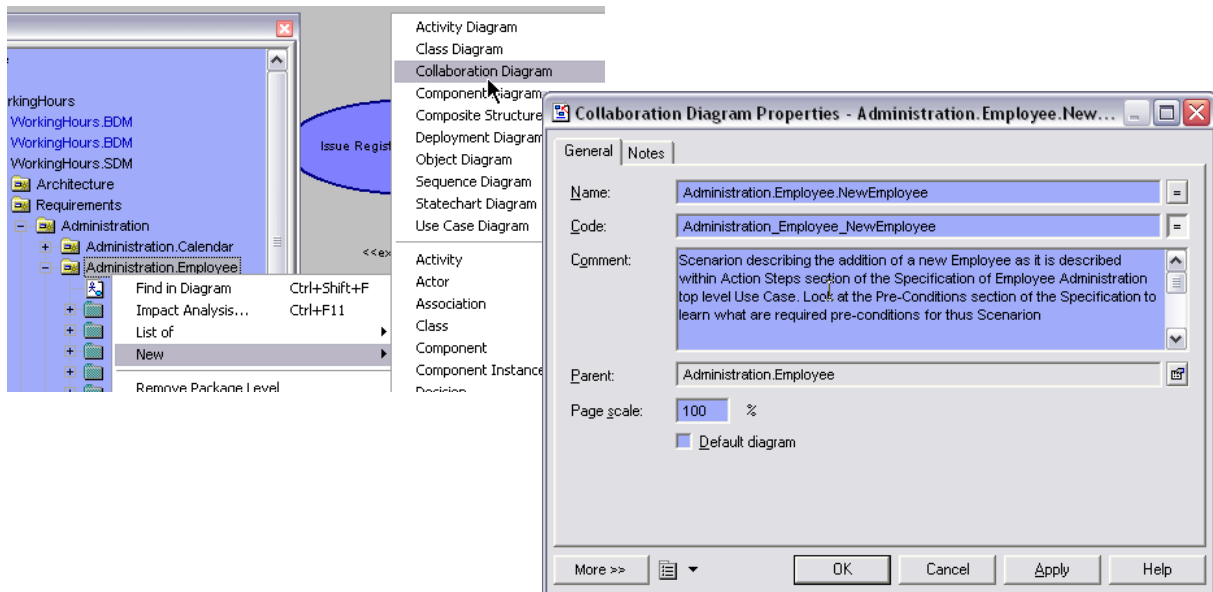
OSNOVE ZAHTEVA

- Elaboracija funkcionalnih zahteva,
 - Prikaz scenarija odvijanja Use Case,
 - Kolaboracija skupa objekata kroz razmenu poruke,
 - Izbor Use Case, scenarija, početnih uslova,
- Elaboracija Arhitekture sistema,
 - Promocija poruka kolaboracije u metode,
 - Alokacija metoda na Interfejsima,
 - Uspostavljanje komponenti kao skupa interfejsa,
 - Specifikacija interfejsa i komponenti,

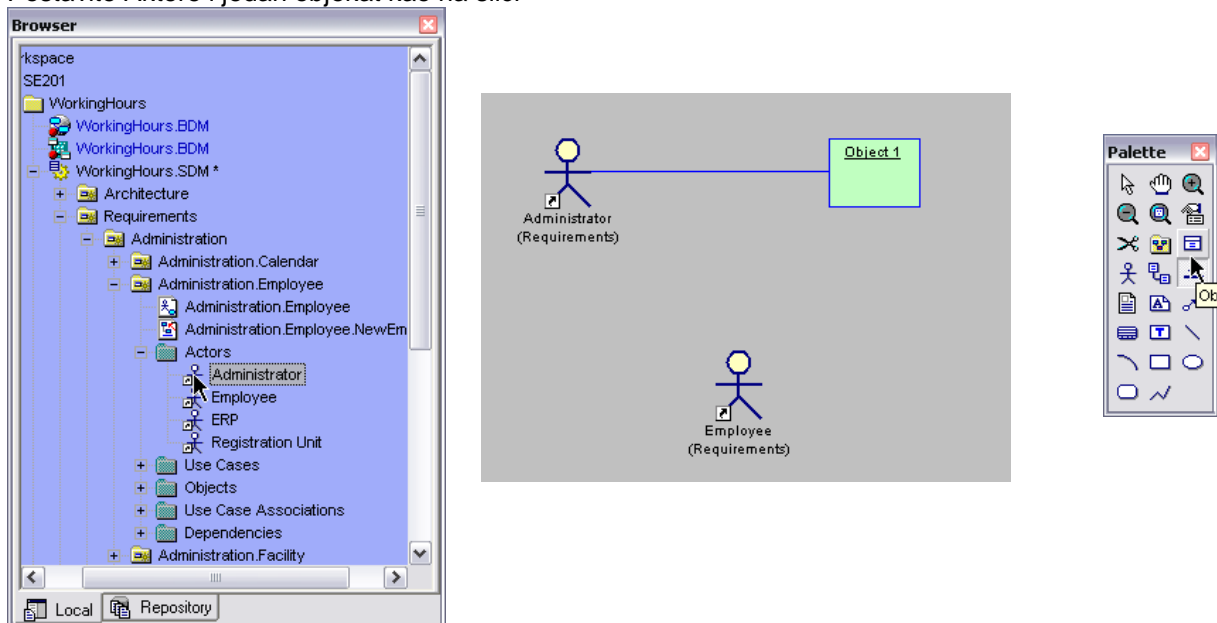
Elaboracija Funk. Zahteva

- Uspostavljanje veze između Funkcionalnih zahteva i Elemenata Arhitekture,
 - Funkcionalni zahtevi su definisani kroz Use Case, Aktere i Use Case Dijagrame,
 - Potrebno ih je razraditi kroz scenarija
 - Opis kooperacije skupa objekata, razmenom poruke, sa ciljem realizacije jednog od scenarija upotrebe sistema,
 - Svaki Top Level Use Case barem jedan scenario,
 - Pojedini Top Level Use Case mogu imati i više od jednog scenarija,
- Uspostavljanje veze između Funkcionalnih zahteva i elemenata Arhitekture,
 - Svaki objekat na dijagram asociirati sa nekim od prethodno definisanih Interfejsa,
 - Svaka poruka postaje time metod na tome Interfejsu,
 - Garancija da se postavljeni funkcionalni zahtevi mogu realizovati na uspostavljenoj Arhitekturi sistema,
 - Specifikacija potrebnih Interfejsa i Metoda,

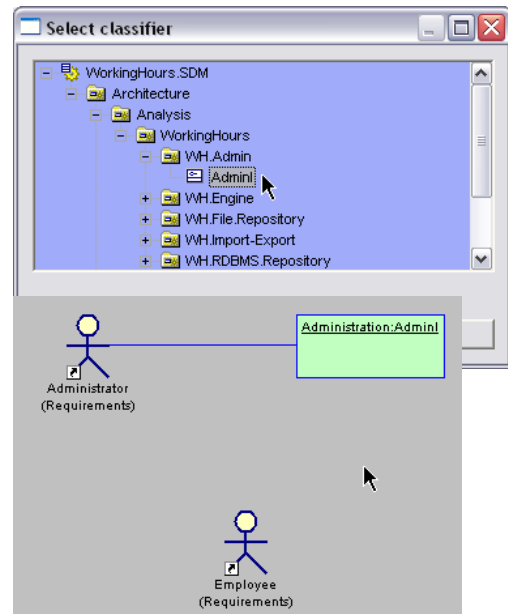
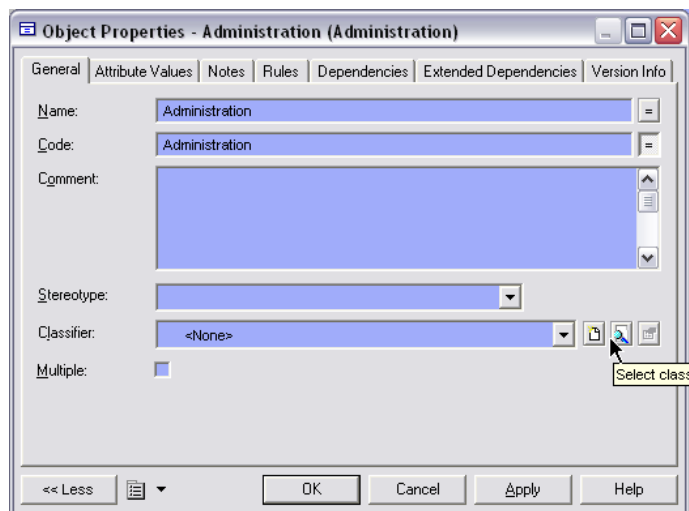
Počinjemo sa funkcijom Administracije zaposlenih (Administration.Employee)



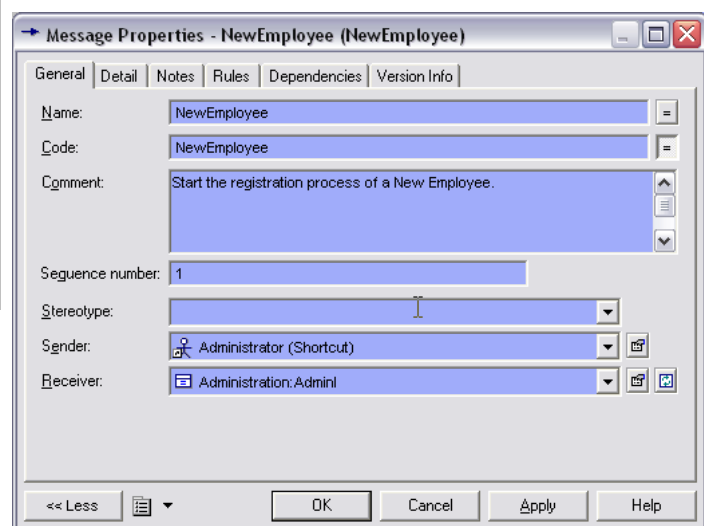
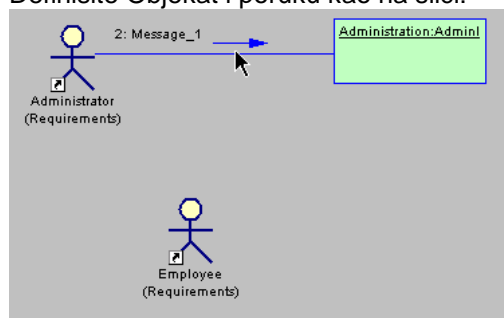
Postavite Aktore i jedan objekat kao na slici



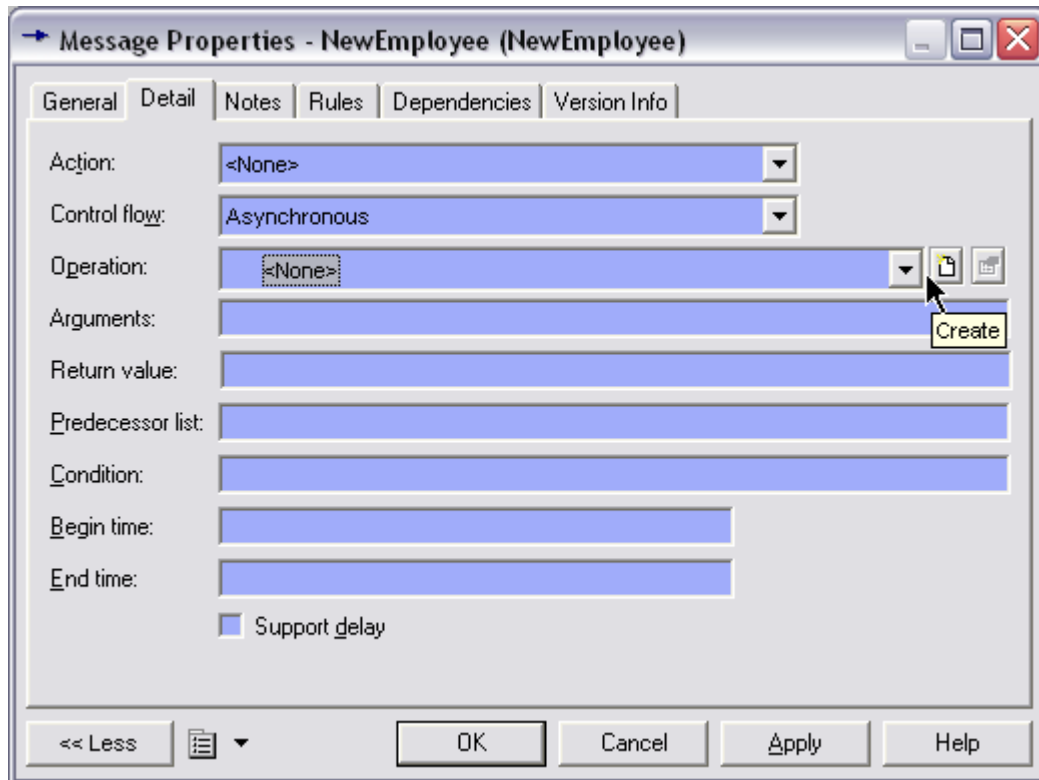
- Definišite Objekat kao na slici:



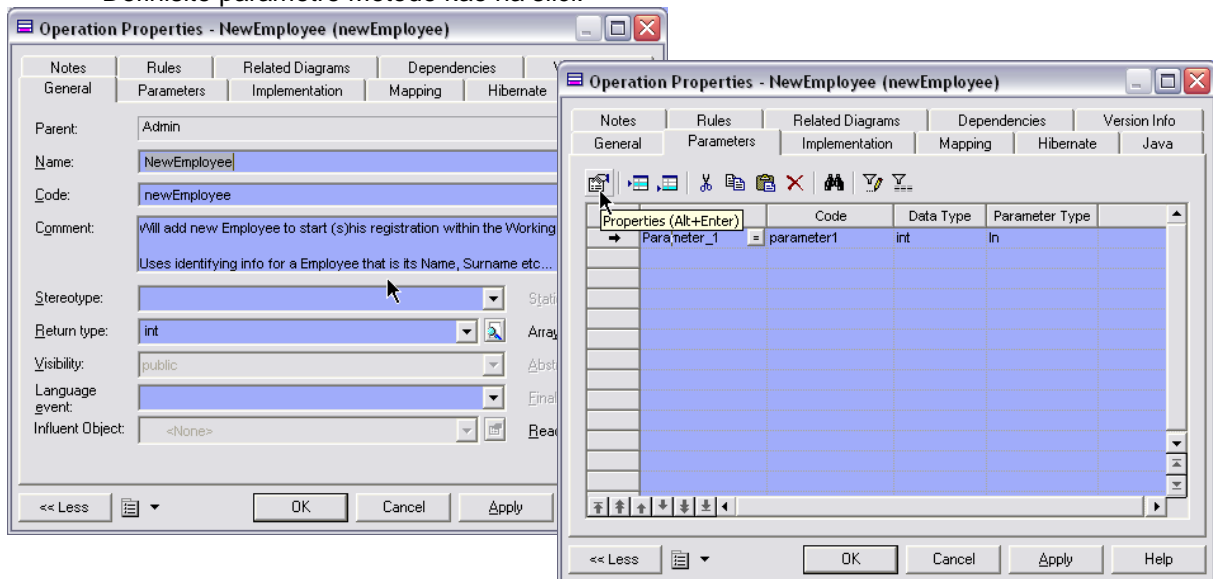
Definišite Objekat i poruku kao na slici:



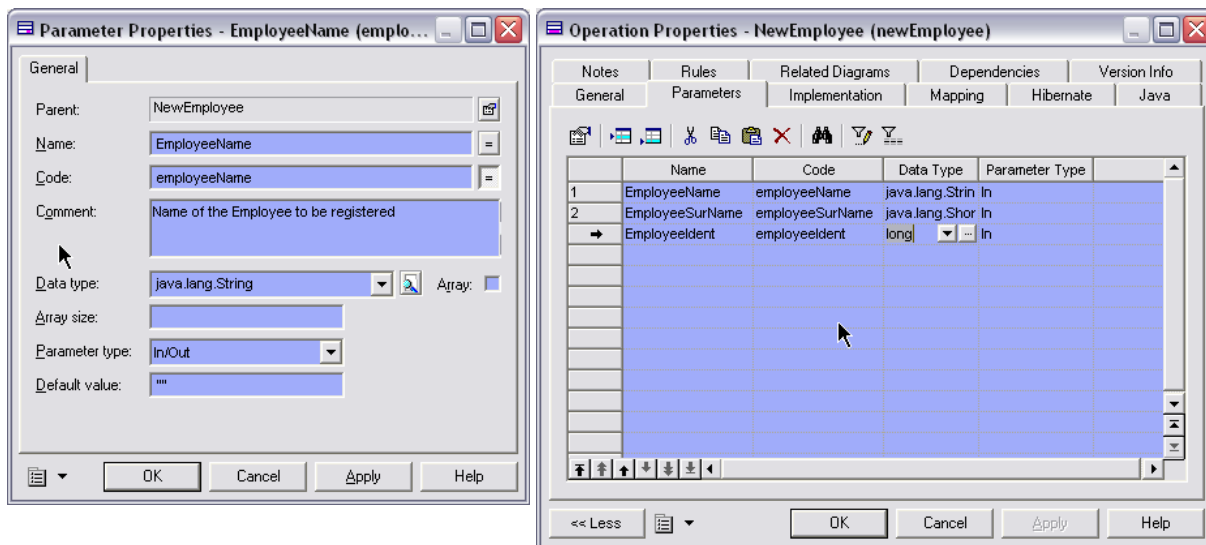
Definišite parametre Poruke kao na slici:



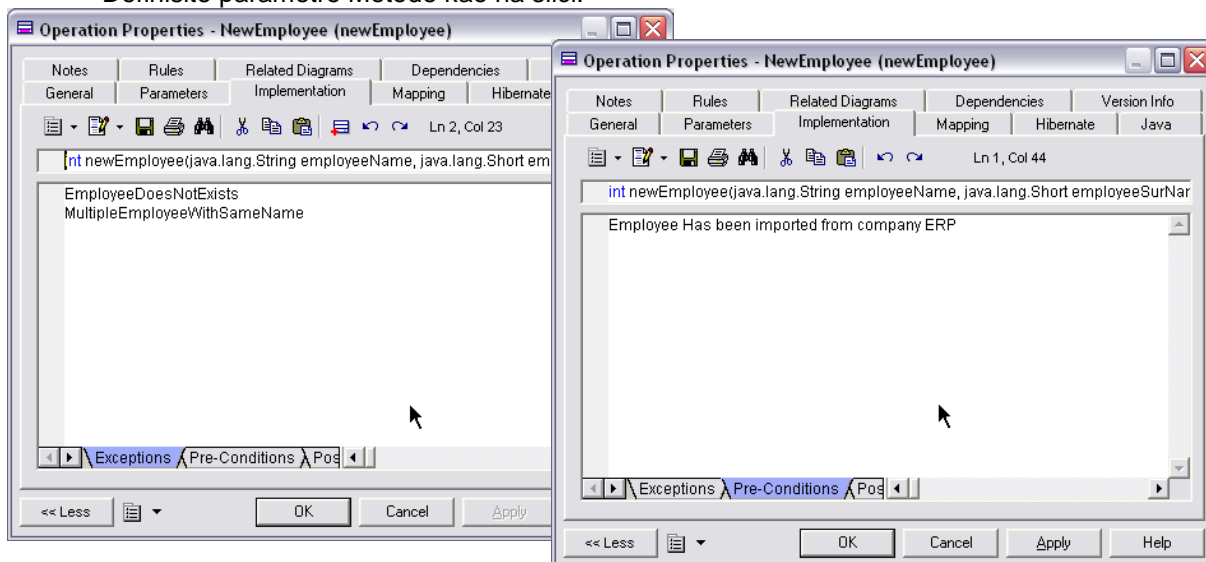
- Definišite parametre Metode kao na slici:



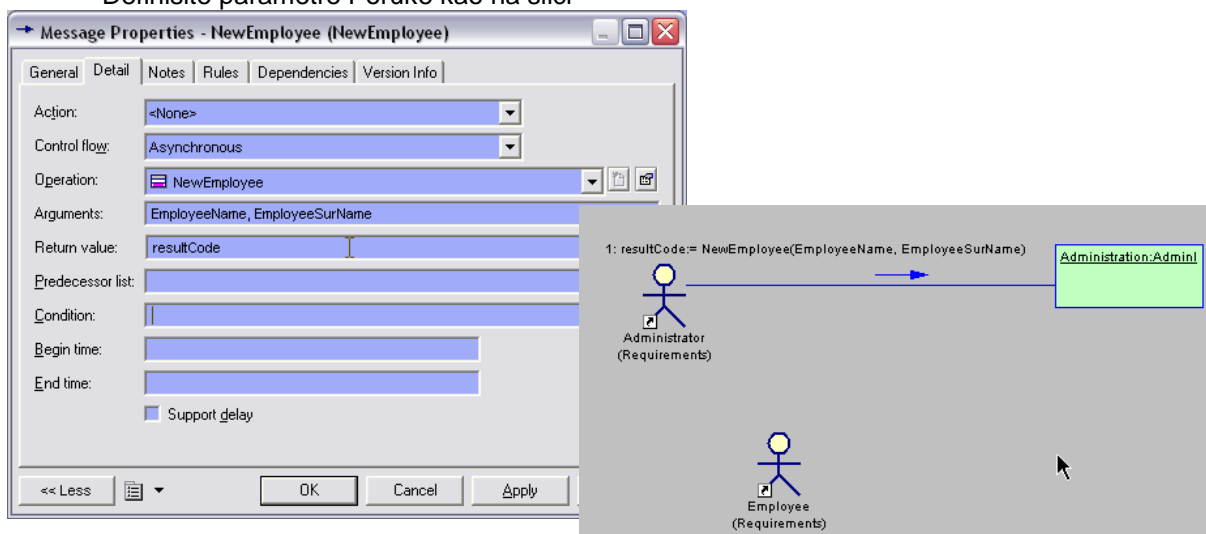
Definišite parametre Metode kao na slici:



- Definišite parametre Metode kao na slici:



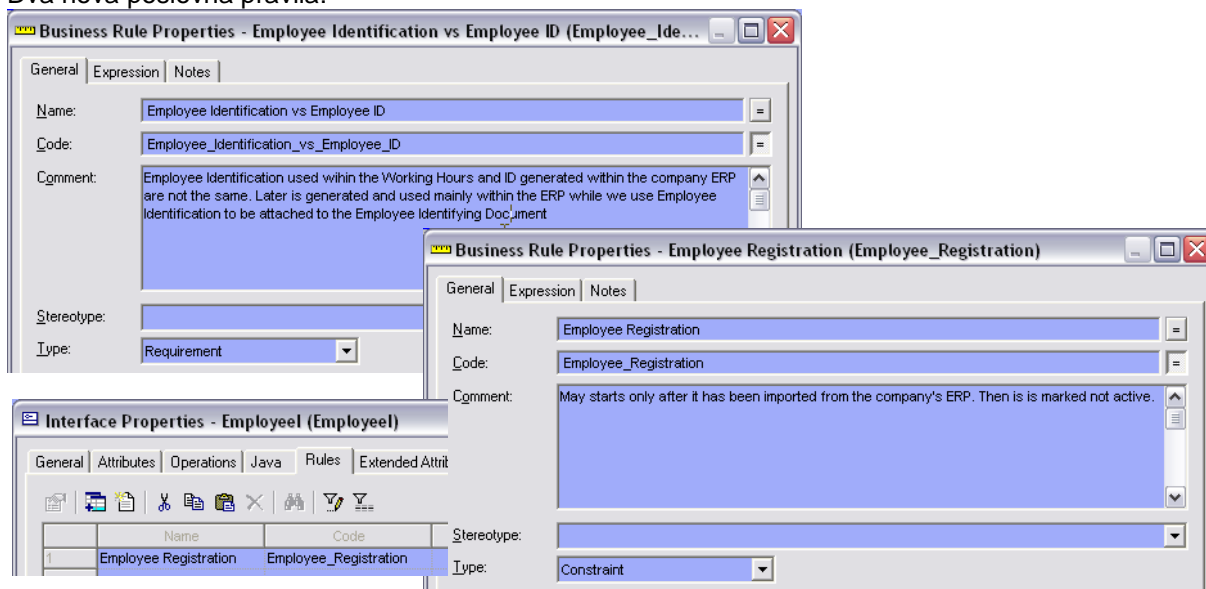
- Definišite parametre Poruke kao na slici



- Administracija Zaposlenih - Arhitektura
 - Prethodno je importovana evidencije iz ERP-a,

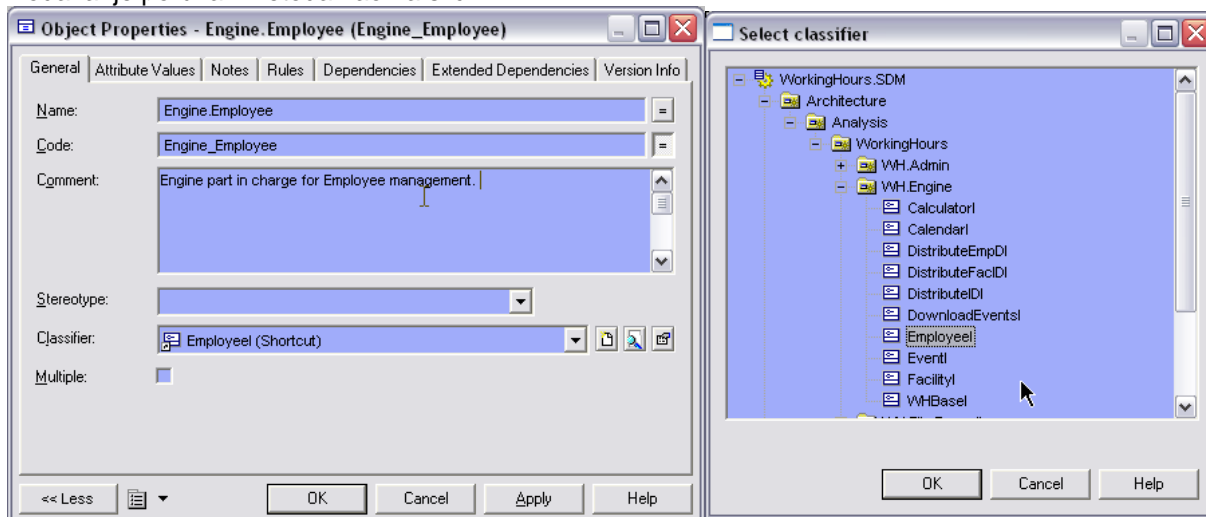
- Primena MVC obrazca,
 - Za sada View bez ozbiljnije dekompozicije,
 - WH.Admin:AdminI - aplikacija, (View)
 - WH.Engine:EmployeeI - rukovanje (Controller)
 - WH.Engine.RDBMSRepository.EmployeeModelI – perzistencija (model),
 - WH.Engine.RDBMSRepository.Employee – perzistencija – Entitet (model)
- Prikaz kooperacije – do distribucije na RUnit,

Dva nova poslovna pravila:

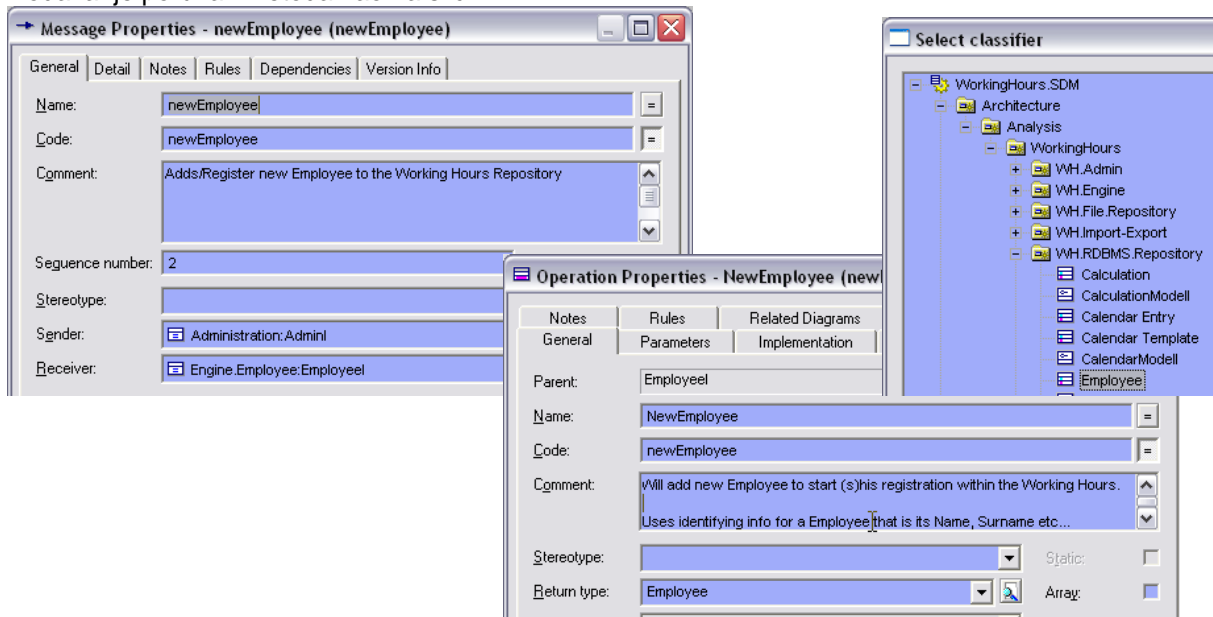


- Propagacija zahteva
 - Preusmeravanje poziva na Engine
 - Isti metoda – AdminI kao Wrapper
 - Provera u repozitorijumu
 - Da li postoji odgovarajući zapis,
 - Scenario pretpostavlja da važi,
 - Pročitati ga i vratiti nazad na Admin
 - Vraćanje vrednosti do Engine i pokretanje procesa registracije,
 - Generisanje Identifikatora i dokumenta,

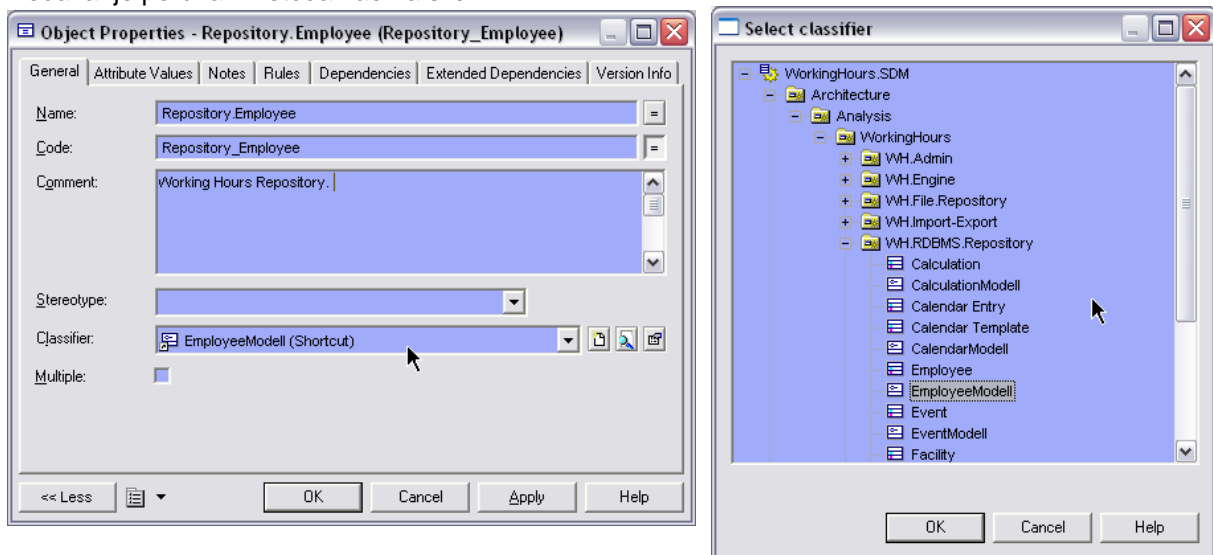
Dodavanje poruka i metoda kao na slici:



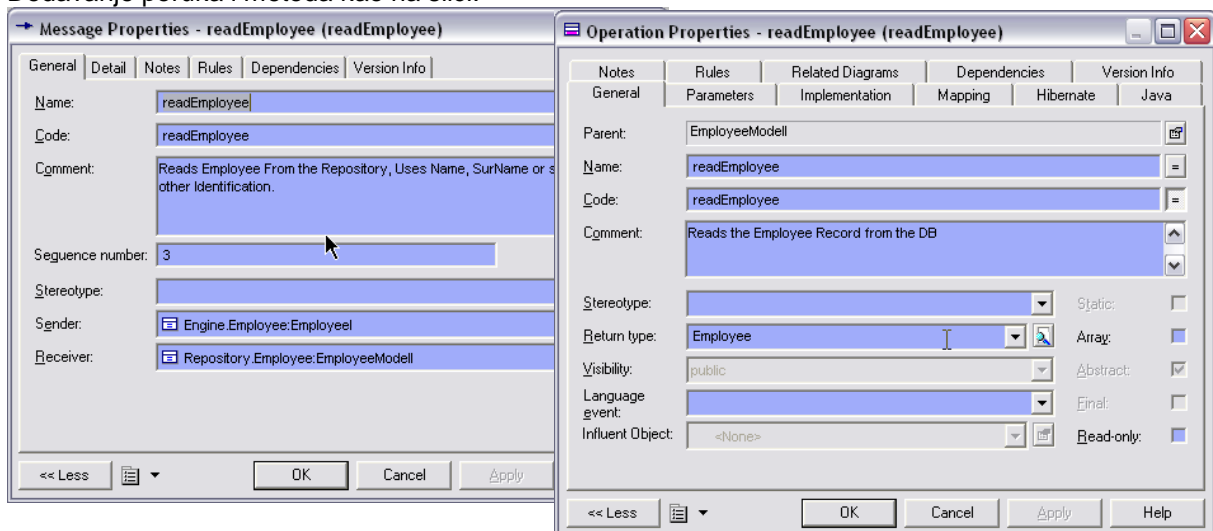
Dodavanje poruka i metoda kao na slici:



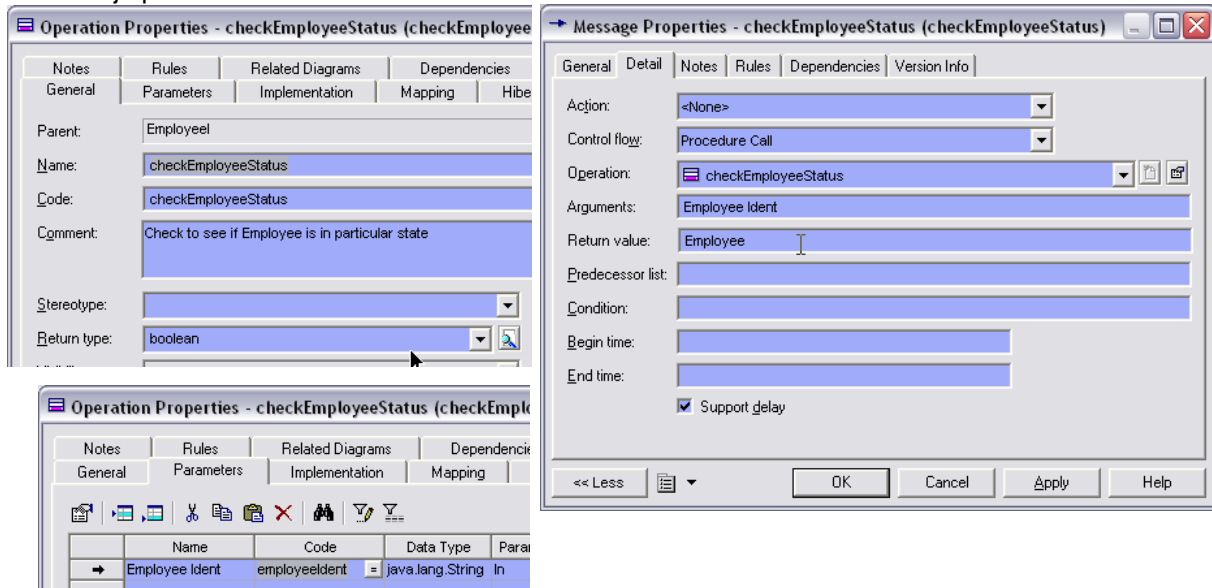
Dodavanje poruka i metoda kao na slici:



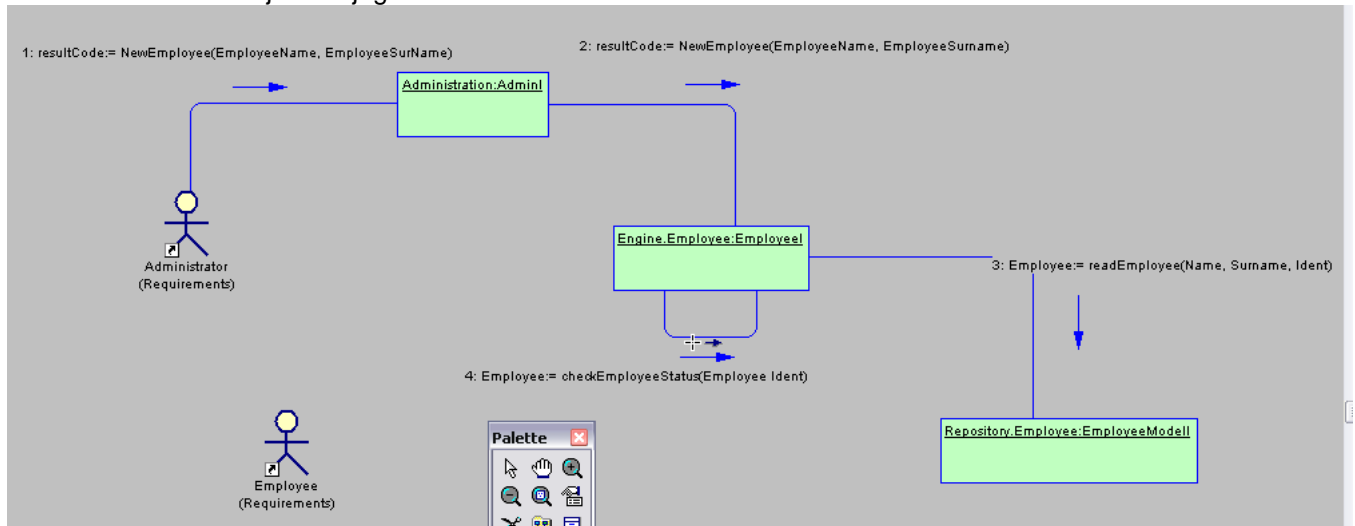
Dodavanje poruka i metoda kao na slici:



Dodavanje poruka i metoda kao na slici:

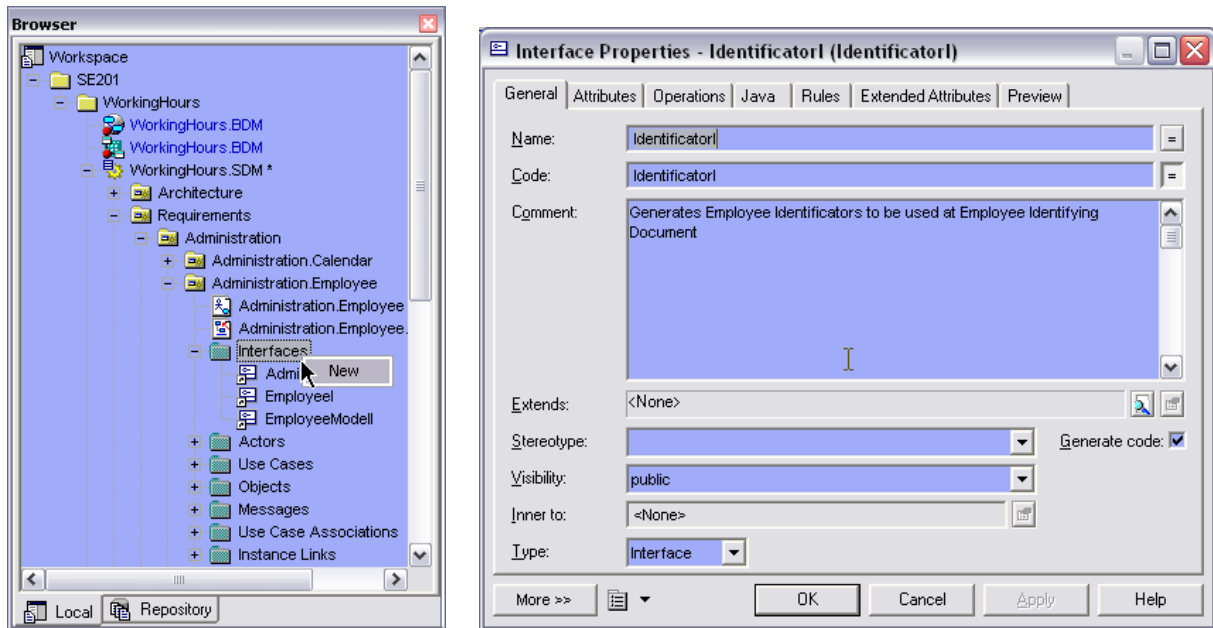


- Trenutno stanje na dijagramu bi trebalo da bude kao na slici:

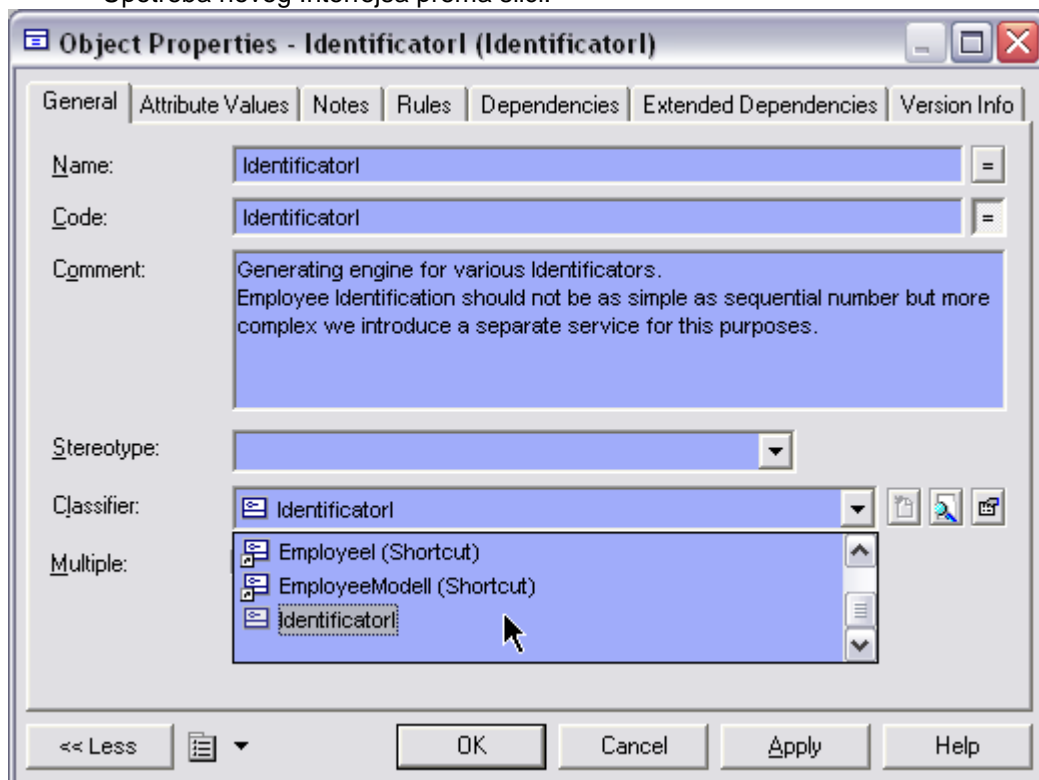


- Sledi korak aktiviranja registracije korisnika
 - Generisanje Identifikatora,
 - Generisanje Identifikacionog Dokumenta,
 - Aktiviranje Registracije,
 - Predaja Identifikacionog Dokumenta Zaposlenom,
- Novi Artifakti
 - Interface - Generisanje Identifikatora,
 - Akter – Izrada Identifikacionog Dokumenta

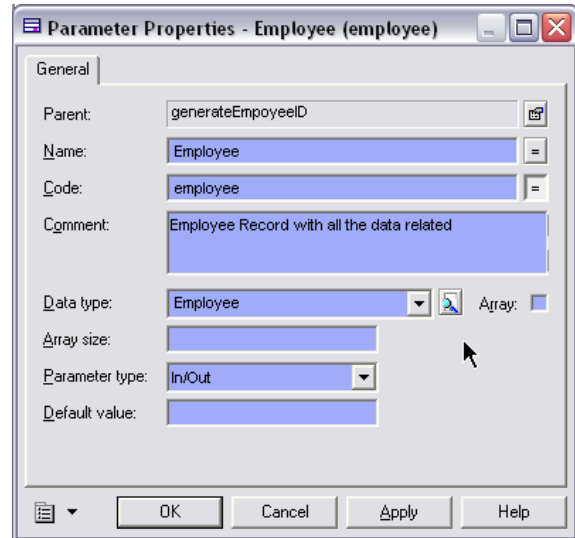
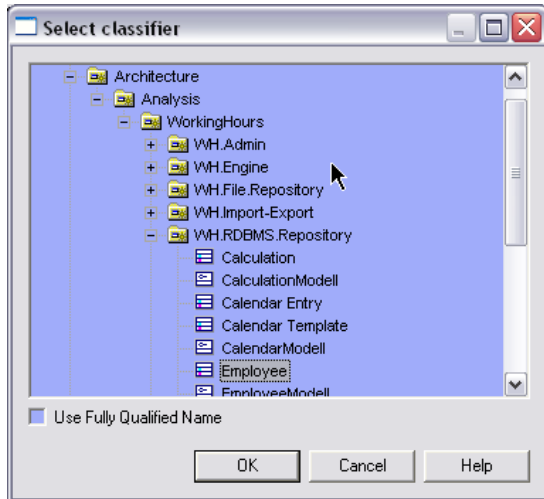
Dodavanje novog Interfejsa prema slici:



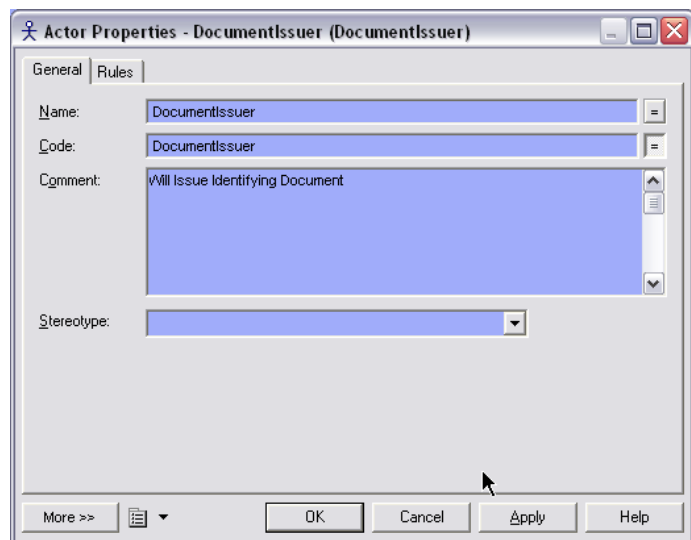
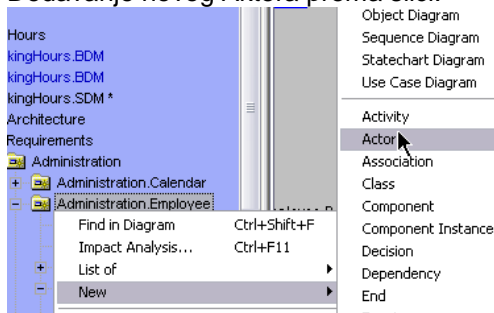
- Upotreba novog Interfejsa prema slici:



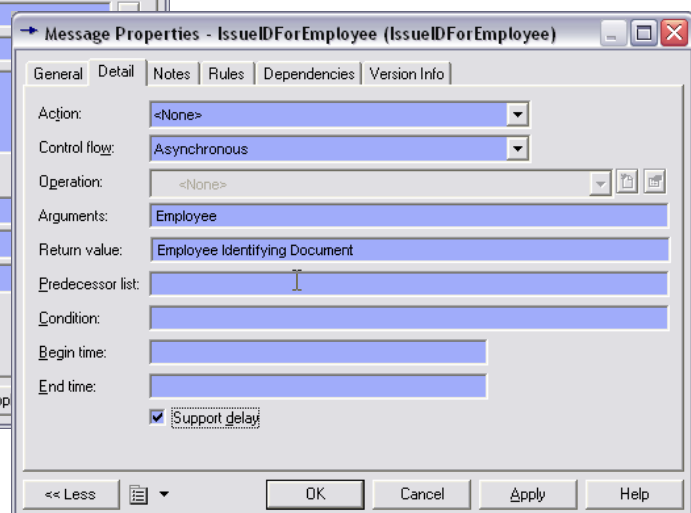
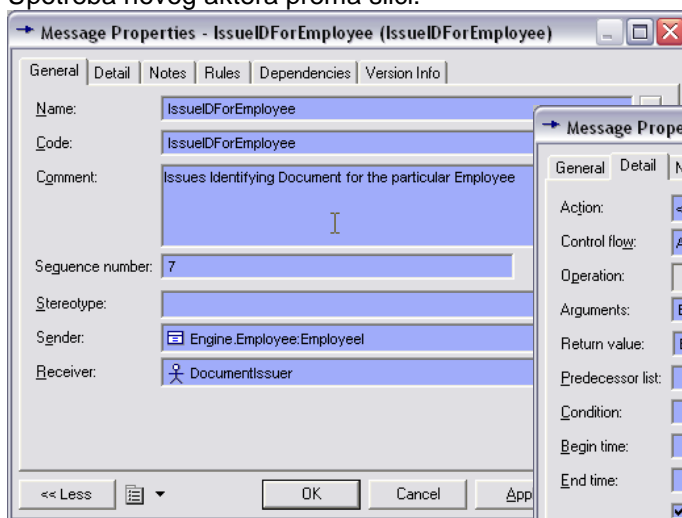
- Upotreba novog Interfejsa prema slici:



Dodavanje novog Aktera prema slici:

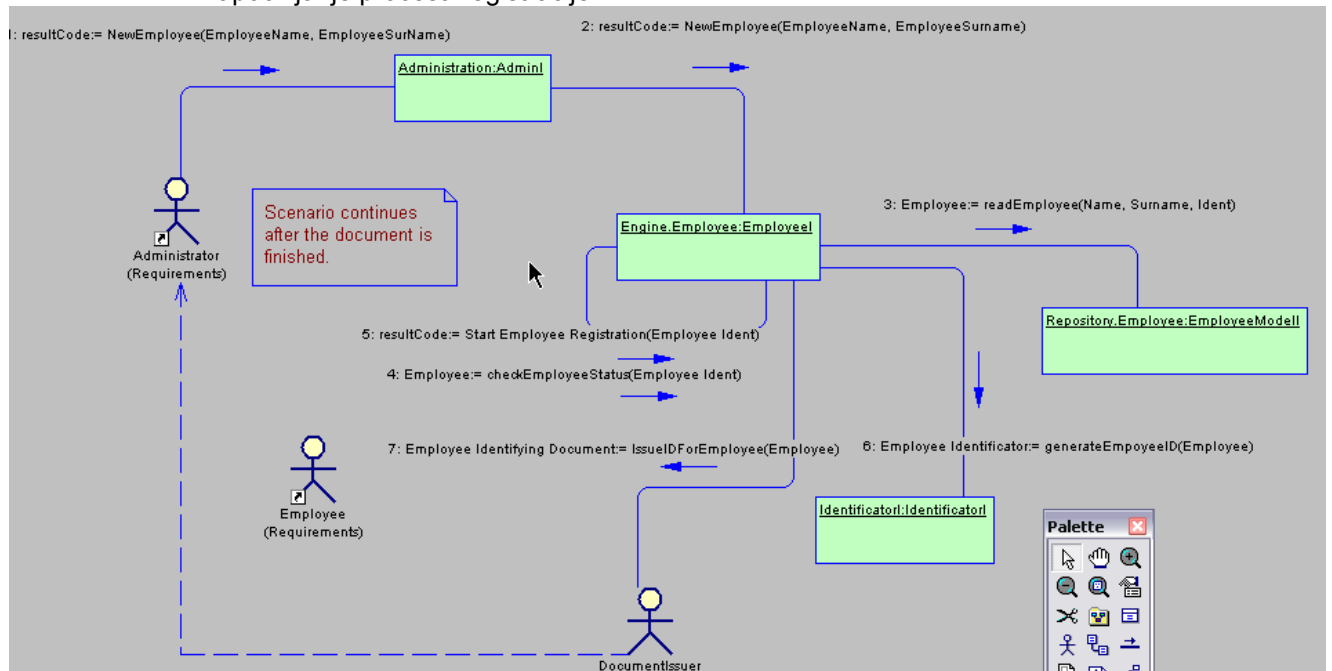


Upotreba novog aktera prema slici:



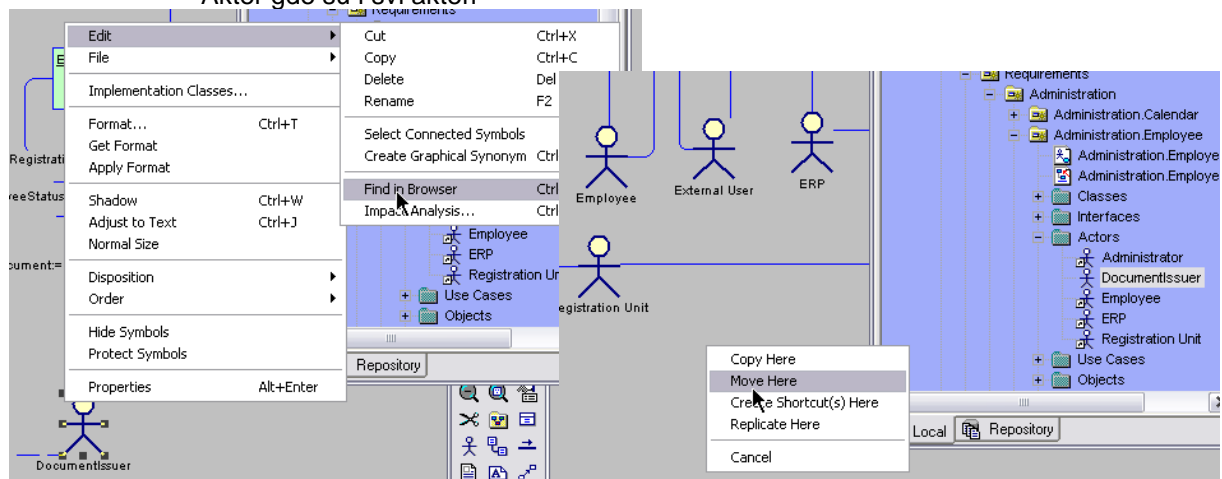
- Administracija Zaposlenog

– Započinjanje procesa registracije

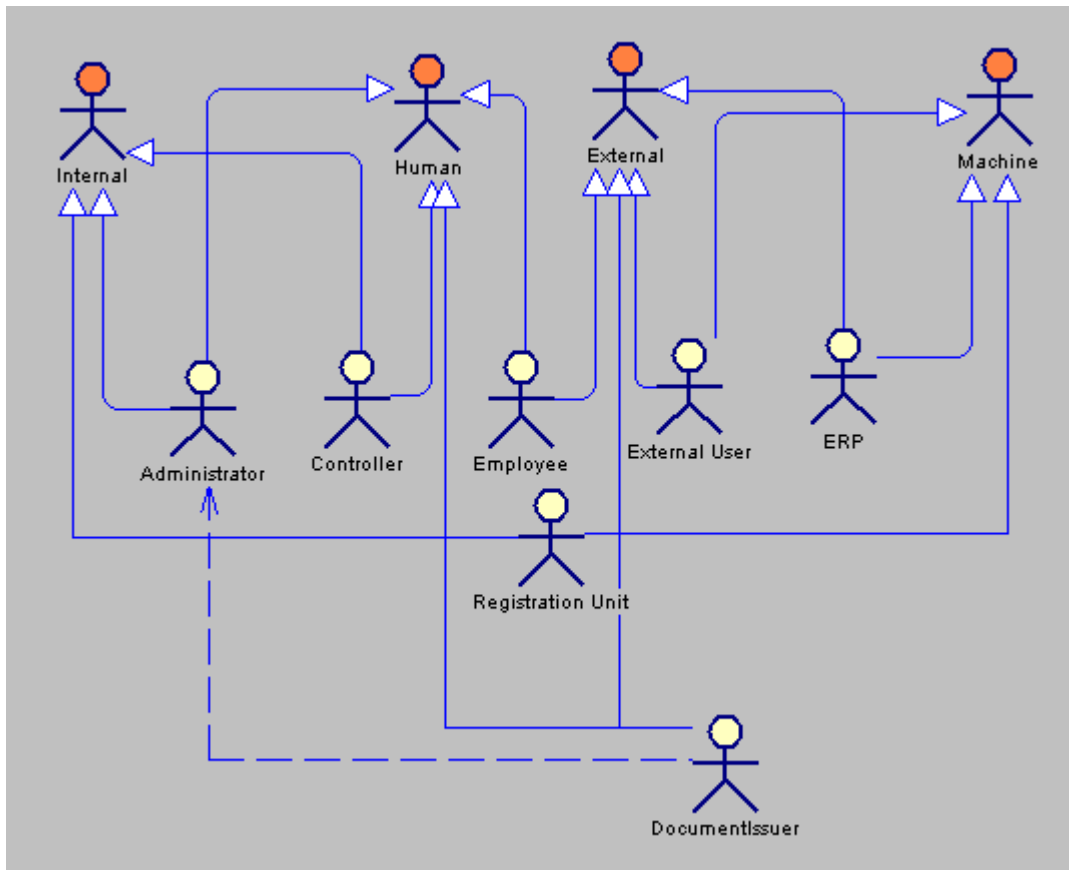


- Relokacija novih artifakata prema mestu pripadanja,

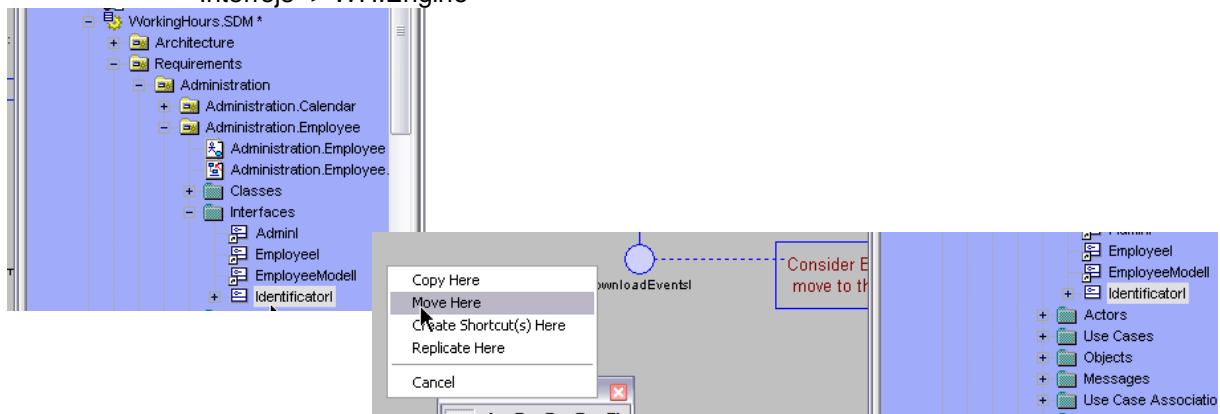
– Akter gde su i svi akteri



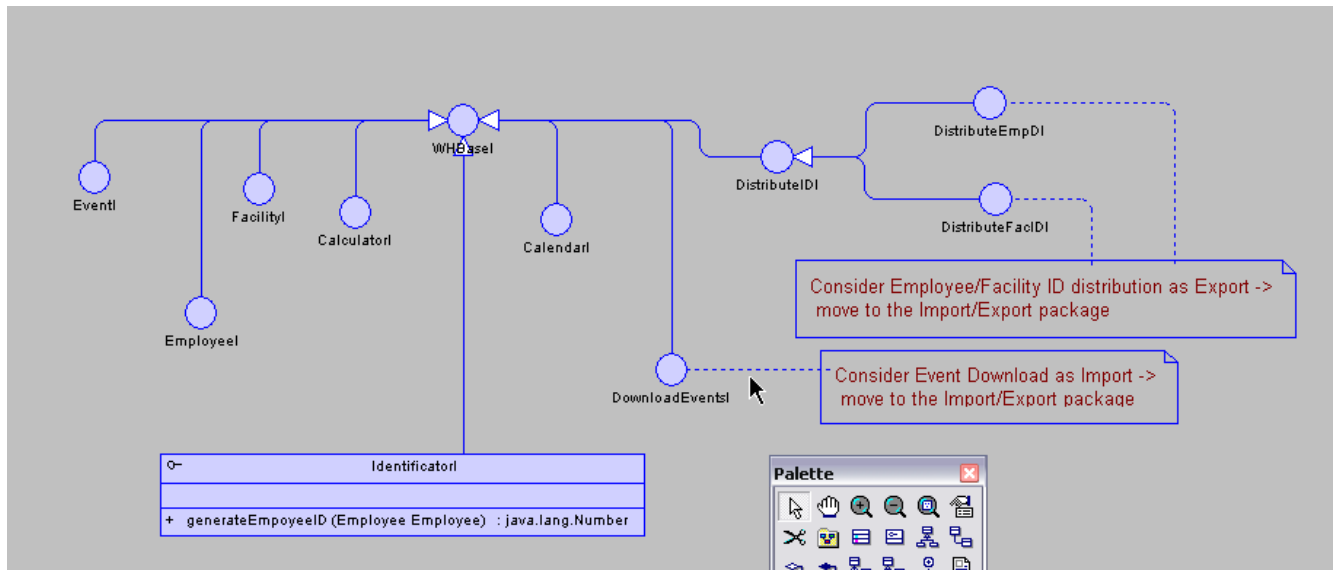
- Ažuriranje prethodnog dijagrama



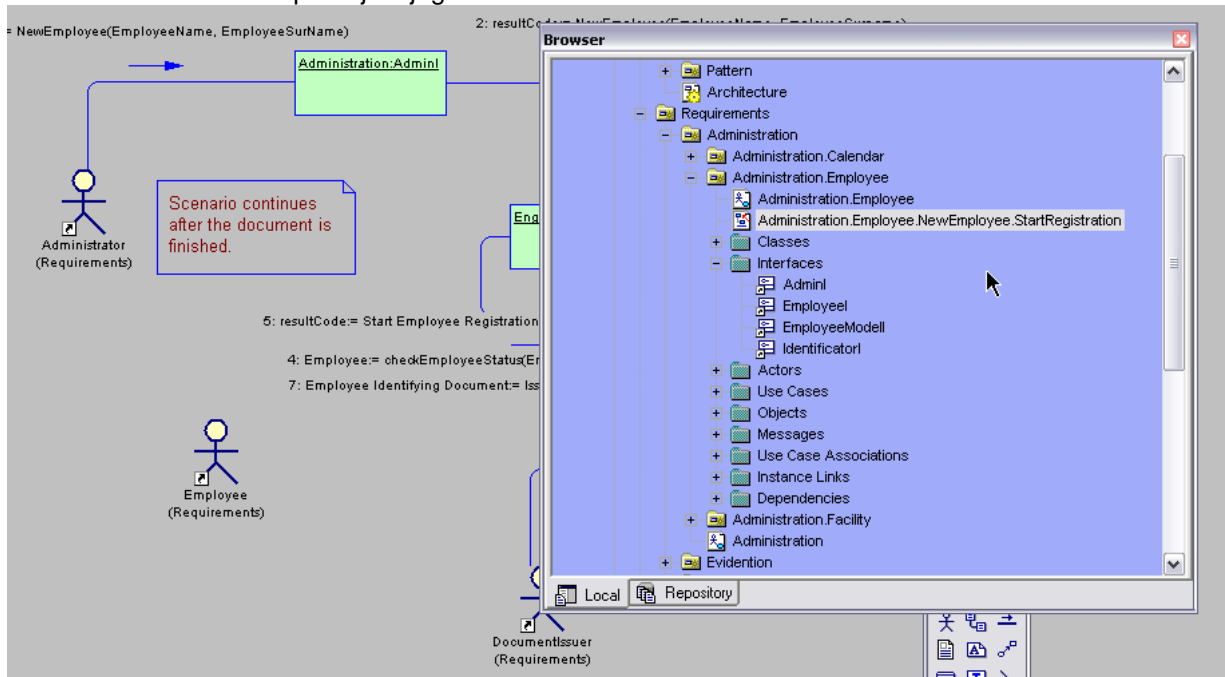
- Relokacija novih artifakata prema mestu pripadanja,
 - Interfejs -> WH.Engine



Ažuriranje prethodnog dijagrama



Izmena naziva – Dekompozicija dijagrama



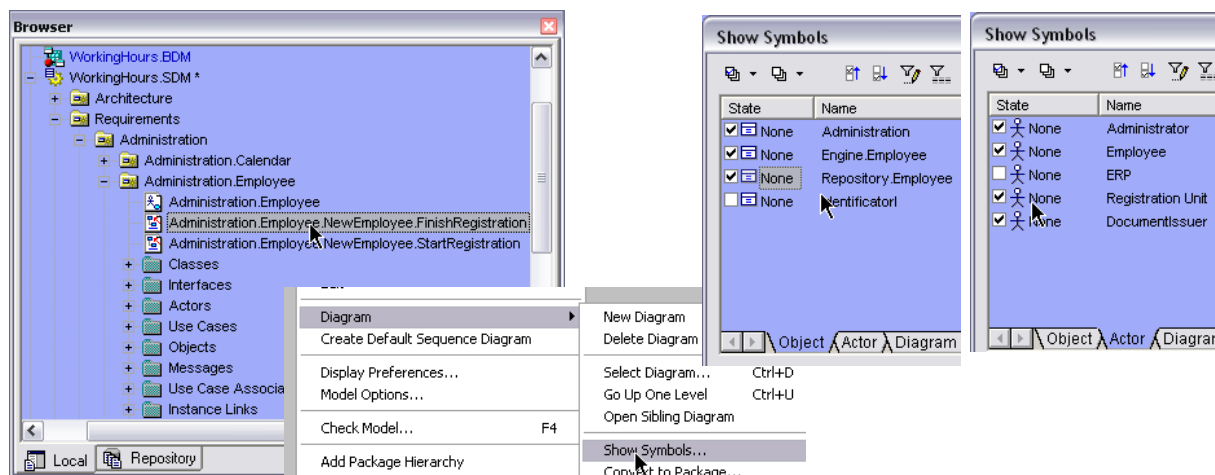
VEŽBANJE

- Pokušati svojim rečima, verbalno, opisati Collaboration dijagram koji je urađen,
- Pregledati celo stablo browsera i videti šta je sve u procesu dodato i na kome mestu,
- Pregledati sve liste i videti šta je sve dodato i na kome mestu,
- Pregledati koji su Interfejsi dobili metode,
- Uradite Kolaboracioni dijagram za NewEmployee.FinishRegistration

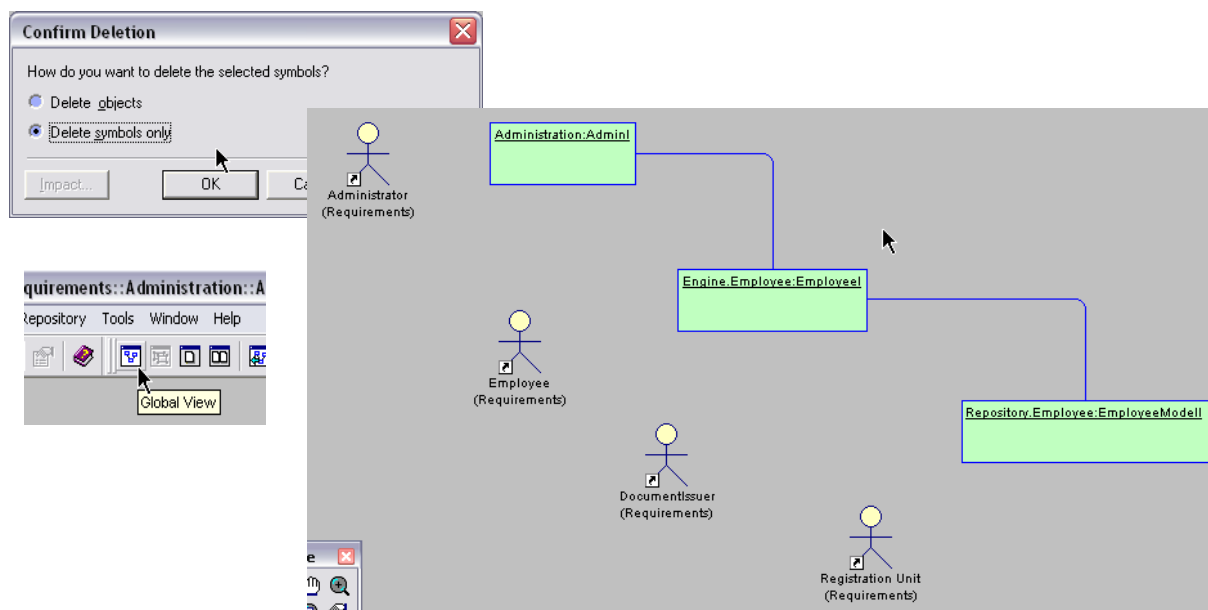
ELICITACIJA ZAHTEVA

Elaboracija Funk. Zahteva

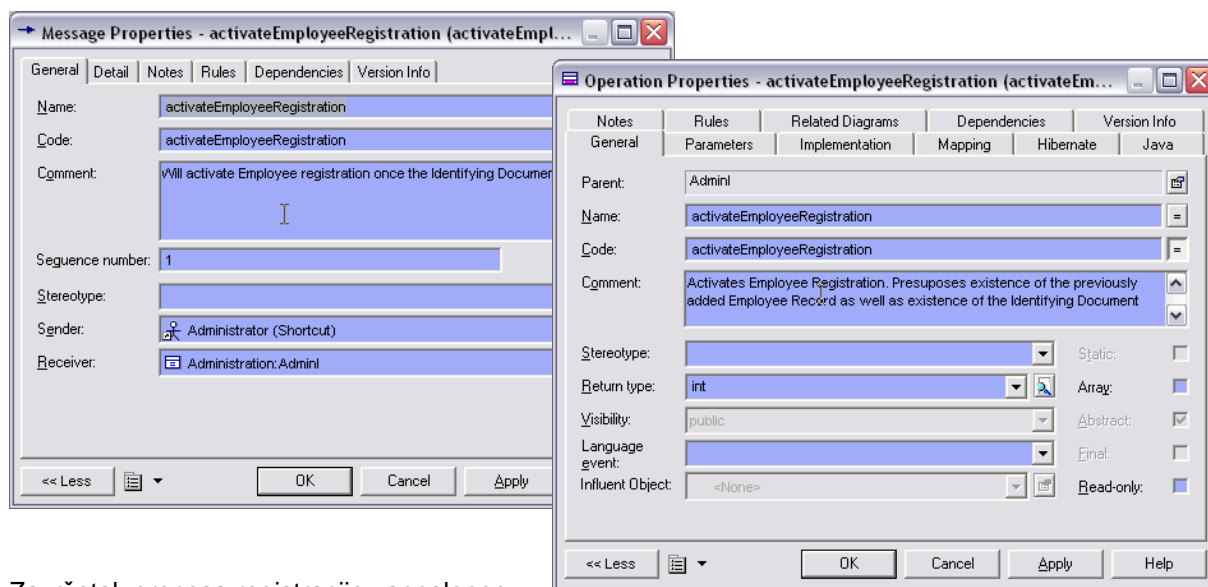
- Završetak procesa registracije zaposlenog
 - Novi dijagram odgovarajućeg naziva,
 - Preuzimanje postojećih objekata,



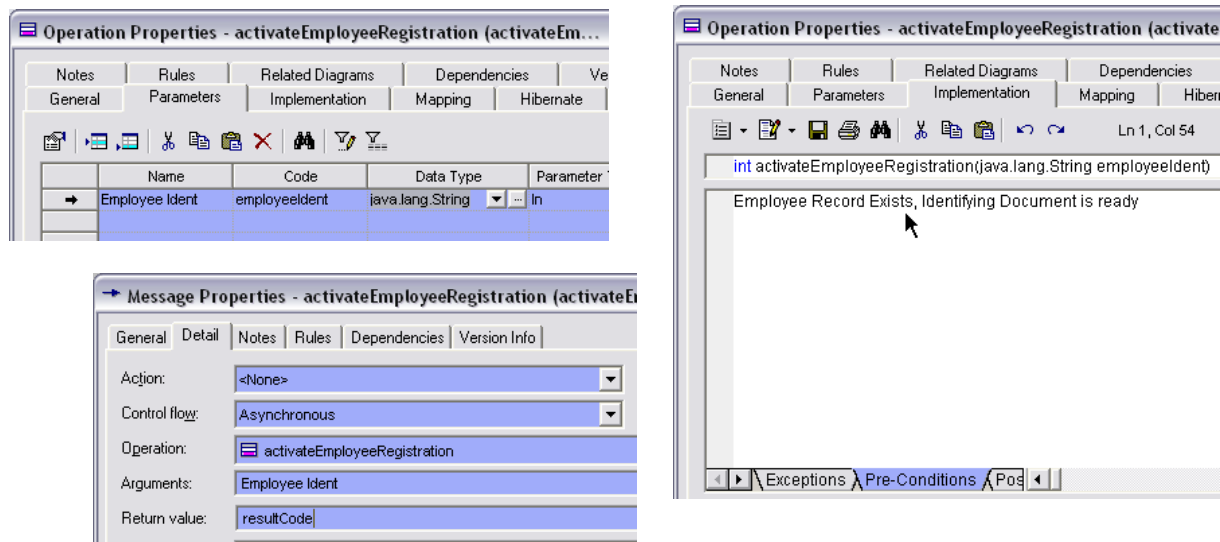
Završetak procesa registracije zaposlenog



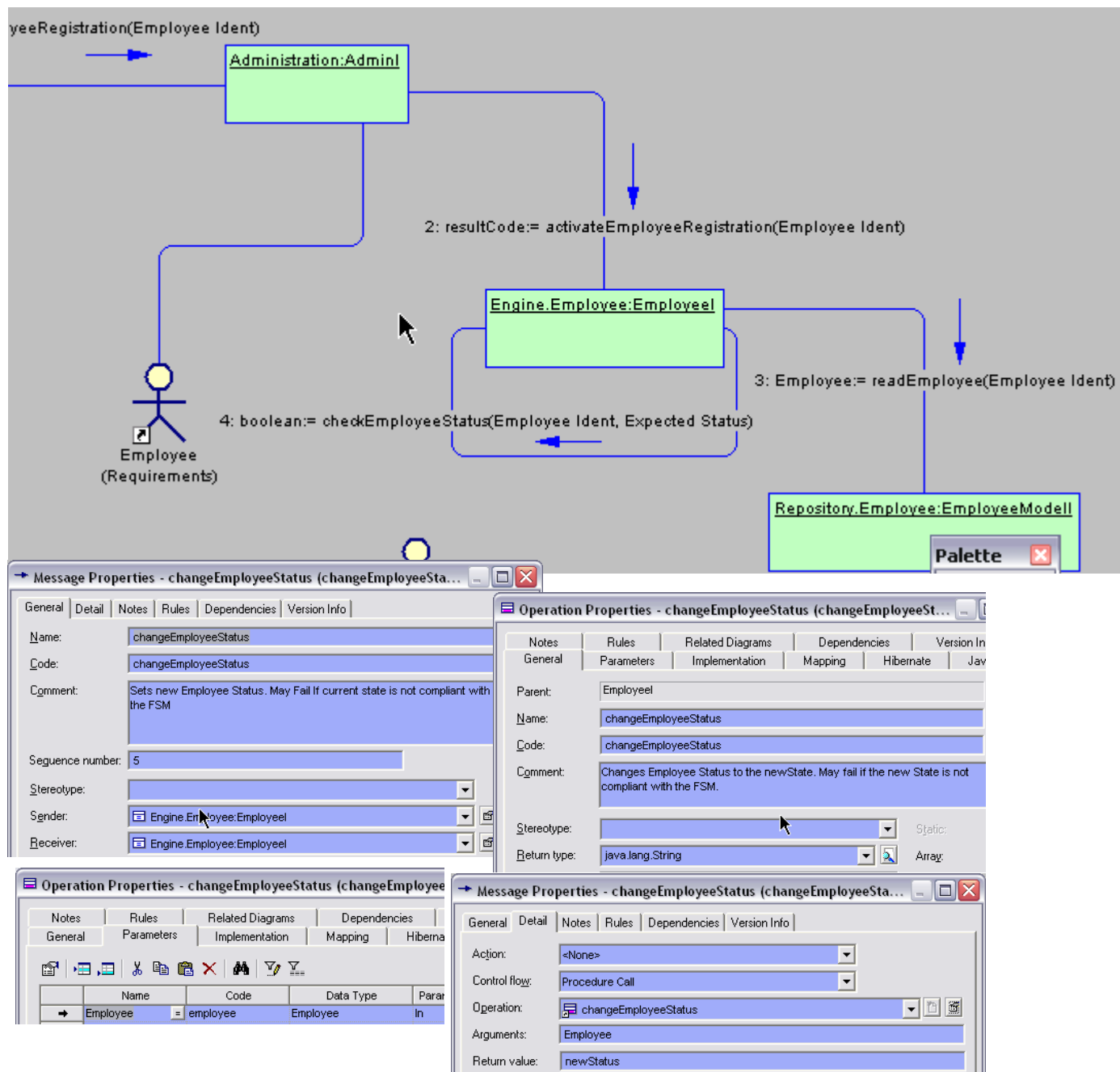
Završetak procesa registracije zaposlenog



Završetak procesa registracije zaposlenog



Završetak procesa registracije zaposlenog



Message Properties - SaveEmployee (SaveEmployee)

General | Detail | Notes | Rules | Dependencies | Version Info

Name: SaveEmployee

Code: SaveEmployee

Comment: Saves Employee Record

Sequence number: 6

Stereotype:

Sender: Engine.Employee.Employee

Receiver: Repository.Employee.EmployeeModel

Operation Properties - SaveEmployee (SaveEmployee)

Notes | Rules | Related Diagrams

General | Parameters | Implementation

Parent: EmployeeModel

Name: SaveEmployee

Code: saveEmployee

Comment: Saves Employee Record

Operation Properties - SaveEmployee (saveEmployee)

Notes | Rules | Related Diagrams | Dependencies

General | Parameters | Implementation | Mapping | Hibernate

Name	Code	Data Type	Parameter
Employee	employee	Employee	In

Message Properties - SaveEmployee (SaveEmployee)

General | Detail | Notes | Rules | Dependencies | Version Info

Action: <None>

Control flow: Procedure Call

Operation: SaveEmployee

Arguments: Employee

Return value: resultCode

Message Properties - SendIdentifyingDocument (SendIdentifyingDocument)

General | Detail | Notes | Rules | Dependencies | Version Info

Name: SendIdentifyingDocument

Code: SendIdentifyingDocument

Comment: Sends Identifying Document to the Employee

Sequence number: 8

Stereotype:

Sender: Administration.Admin

Receiver: Employee (Shortcut)

<< Less | OK | Cancel | Apply

Message Properties - SendIdentifyingDocument (SendIdentifyingDocument)

General | Detail | Notes | Rules | Dependencies | Version Info

Action: <None>

Control flow: Asynchronous

Operation: <None>

Arguments: Identifying Document

Return value:

Predecessor list:

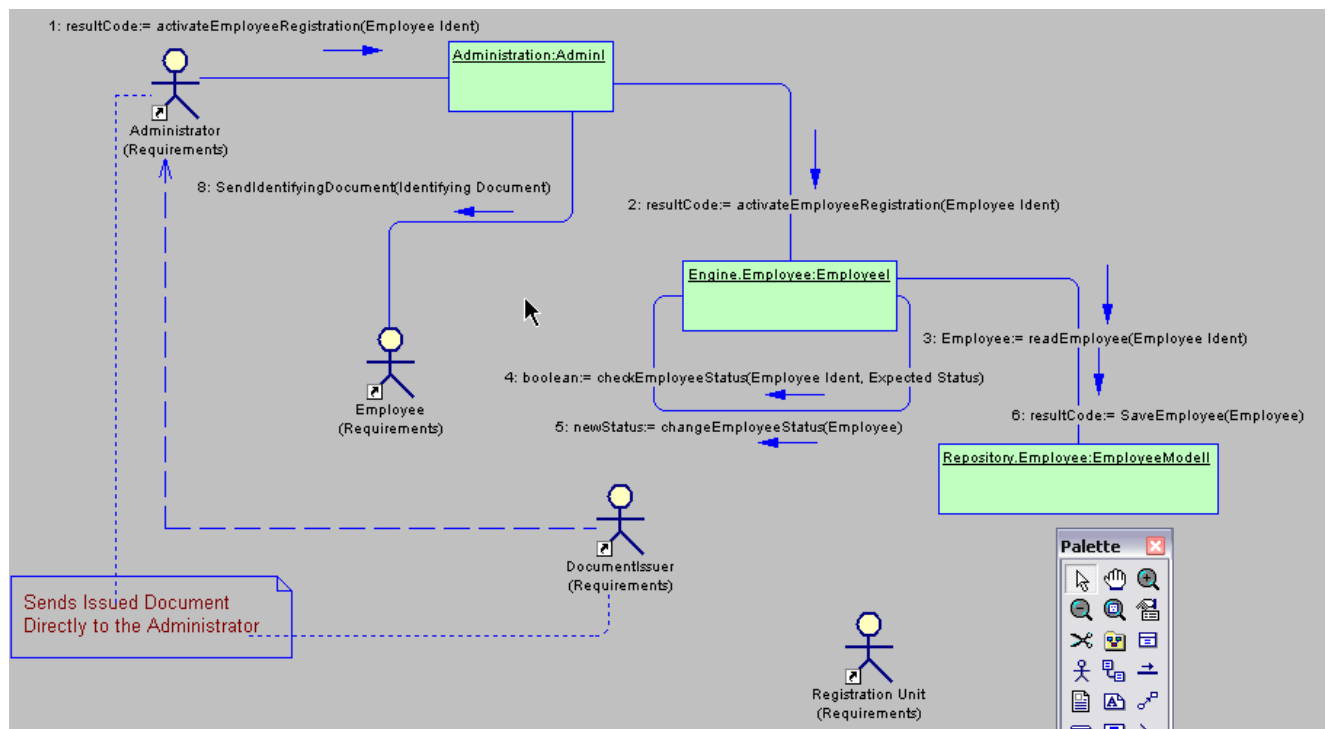
Condition:

Begin time:

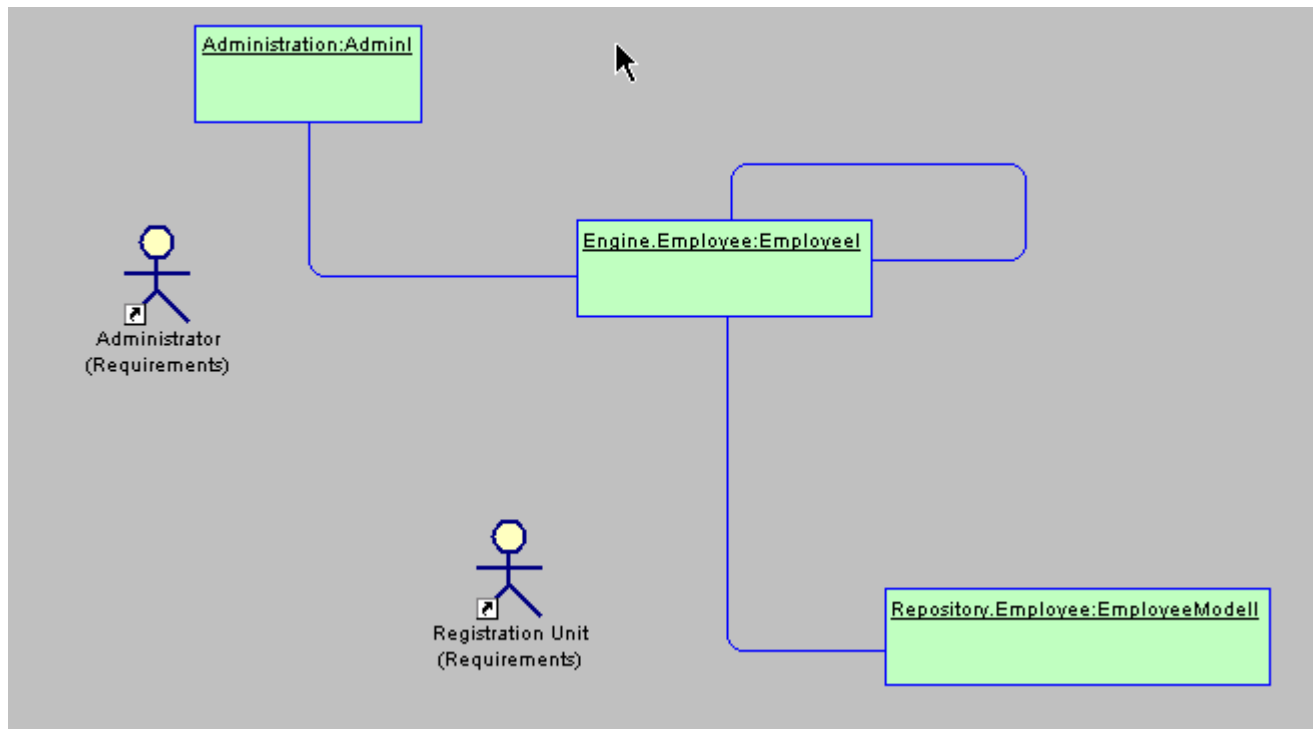
End time:

☒ Support delay

<< Less | OK | Cancel | Apply | Help

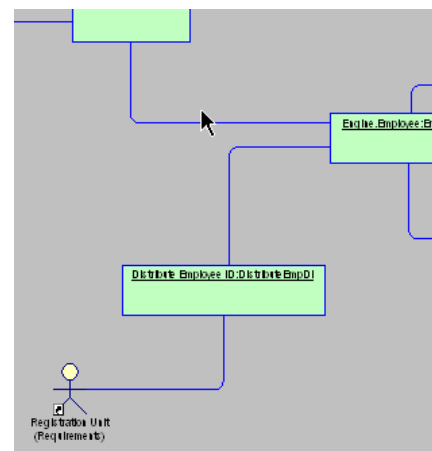
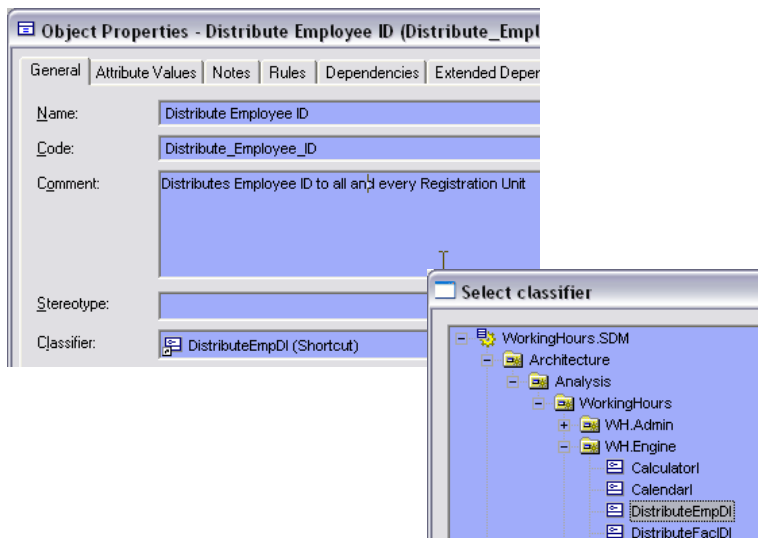


- Završetak procesa registracije zaposlenog,
 - Distribucija Employee ID ka RUnit-ima,
 - Novi dijagram odgovarajućeg naziva,
 - Preuzimanje postojećih objekata,
 - Pogledati prethodne slajdove 3 i 4
 - Imenovanje:
 - Dijagrama Administration.Employee.DistributeEmployeeID's
 - Objekti Administration, Engine.Employeee, Repository.Employee,
 - Preuzeti Aktore Administrator i Registration Unit,
- Distribucija ID-ova zaposlenih,
 - Početni dijagram

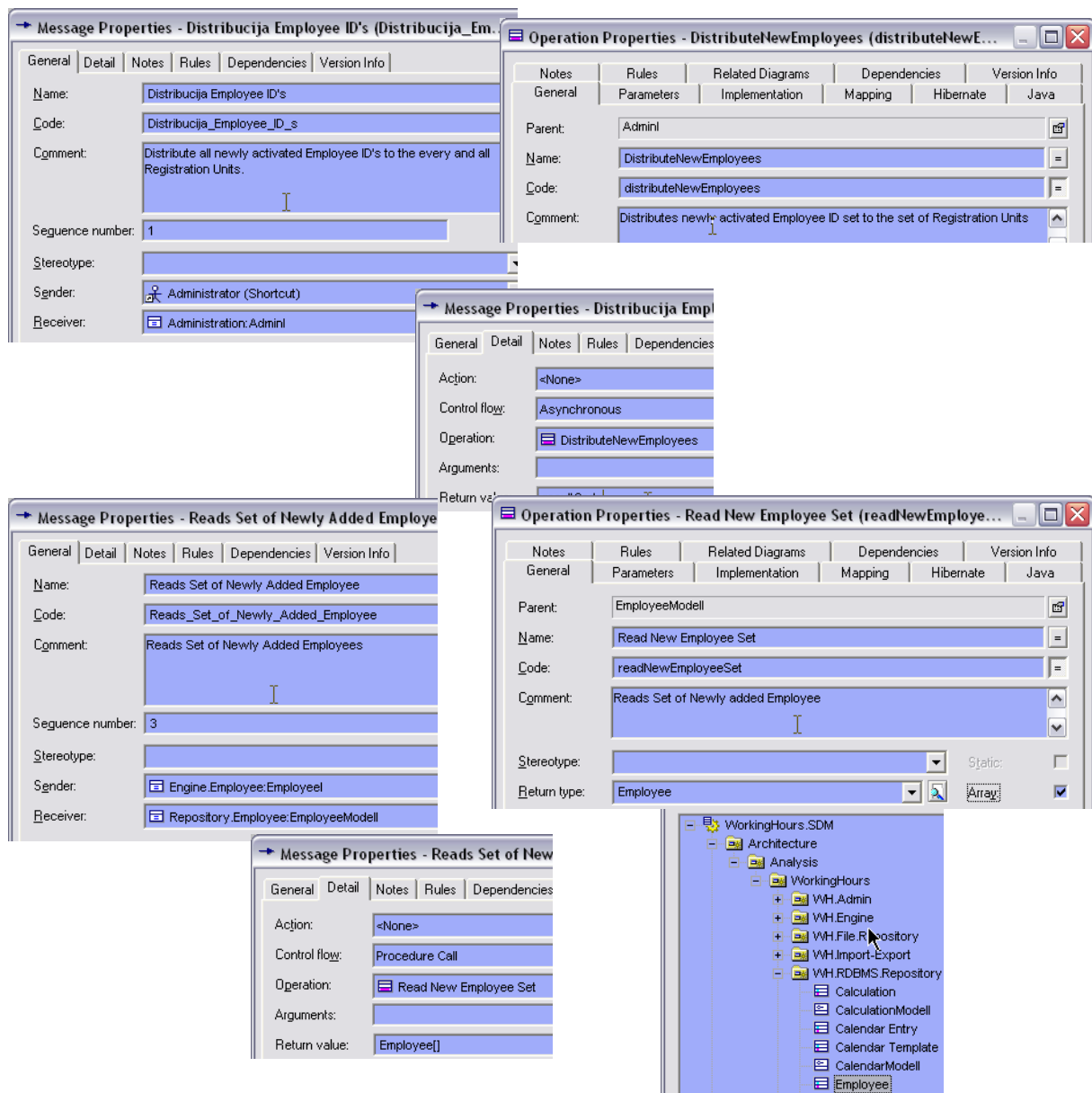


Distribucija ID-ova zaposlenih,

- Dodavanje objekta distribucije

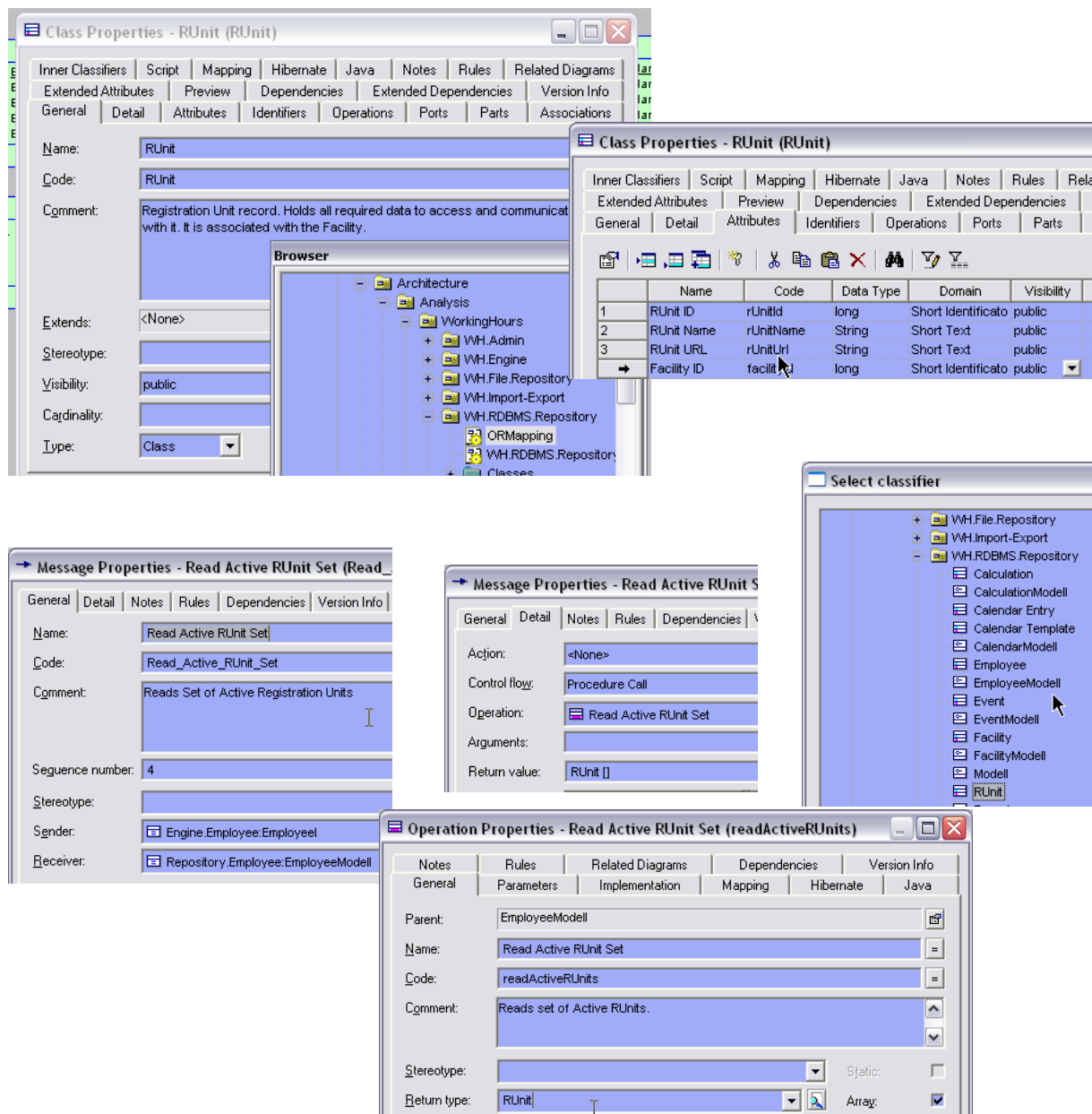


Distribucija ID-ova zaposlenih,



- Distribucija ID-ova zaposlenih,
 - Distribucija zahteva ka RUnit-ima,
 - Koji su to RUnit-i?
 - Potrebno je uvesti novi Entitet u RDBMS Repozitorijumu,
 - Kasnije ga je potrebno elaborirati u CDM-u
 - Za sada samo dodati atribut i identifikator koji se onda koriste u CDM

Dodavanje novog Entiteta



- Distribucija ID-ova zaposlenih
 - Na osnovu prethodno zaključujemo:
 - Da Zaposleni prolazi kroz nekoliko stanja,
 - Importovan – nakon što je lista importovana od ERP-a
 - U toku aktivacije – nakon što se započne aktivacija,
 - Aktiviran – nakon što se završi aktivacija,
 - Distribuiran – nakon što se ID pošalje do RUnit-a
 - Da Registraciona Jedinica može imati više stanja,
 - Aktivno – kada je u radnom stanju,
 - Neaktivno – ako i kada je u toku instalacija, popravka i sl.,
 - Početno – kada joj je potrebno poslati sve podatke,

- Treba proširiti Entitete sa stanjima,

Distribucija ID-ova zaposlenih

Employee

- + Employee ID : long
- + Employee Identifier : java.lang.String
- + Employee Name : java.lang.String
- + Employee Function : java.lang.String
- + Employee Coefficient : double

Facility

- + Facility ID
- + Facility Identification
- + Facility Name

Event

- + Event ID : long
- + Event Timestamp : java.util.
- + Event Type : int
- + Event Action Result : java.lang.

RUnit

- + RUnit ID : long
- + RUnit Name : String
- + RUnit URL : String
- + Facility ID : long

Class Properties - RUnit (RUnit)

Name	Code	Data Type
RUnit ID	rUnitId	long
RUnit Name	rUnitName	String
RUnit URL	rUnitUrl	String
Facility ID	facilityId	long
RUnit Status	rUnitStatus	int

RUnit Status (rUnitStatus)

Name: RUnit Status
Code: rUnitStatus
Comment: Status of Registration Unit. Could be Active, Not-Active and Not-Initialized
Stereotype:
Visibility: public
Data type: int

Class Properties - Employee (Employee)

Name	Code	Data Type
Employee ID	employeeId	long
Employee Identifier	employeeIdentifier	java.lang.Str
Employee Name	employeeName	java.lang.Str
Employee Function	employeeFunction	java.lang.Str
Employee Coefficient	employeeCoefficient	double
Employee Status	employeeStatus	int

Employee Status (employeeStatus)

Parent: Employee
Name: Employee Status
Code: employeeStatus
Comment: Status of the Employee Unit. Could Be Imported, In Activation, Activated, Distributed...
Stereotype:
Visibility: public
Data type: int

Employee

- + Employee ID : long
- + Employee Identifier : java.la
- + Employee Name : java.la
- + Employee Function : java.la
- + Employee Coefficient : double
- + Employee Status : int

Event

- + Event ID : long
- + Event Timestamp : java.util.
- + Event Type : int
- + Event Action Result : java.lang

RUnit

- + RUnit ID : long
- + RUnit Name : String
- + RUnit URL : String
- + Facility ID : long
- + RUnit Status : int

Napraviti FST Status-a

Message Properties - Distribute Employee Set (Distribute_Emp)

General	Detail	Notes	Rules	Dependencies	Version Info
Name: Distribute Employee Set					
Code: Distribute_Employee_Set					
Comment: Distribute Employee Set to the every RUnit from RUnit Set					
Sequence number: 5					
Stereotype:					
Sender: Engine.Employee:Employee1					
Receiver: Distribute Employee ID:DistributeEmpDI					

Operation Properties - DistributeEmployeesToRUnit (distributeEm)

Notes	Rules	Related Diagrams	Dependencies
General	Parameters	Implementation	Mapping
Parent: Employee1			
Name: DistributeEmployeesToRUnit			
Code: distributeEmps2RUnit			
Comment: Distributes set of Employee ID's to the particular Registration Unit			

Parameter Properties - Employee Set (employ...)

General
Parent: Distribute Employee ID Set
Name: Employee Set
Code: employeeSet
Comment: Set of Employees to be distribute
Data type: Employee
Array: <input checked="" type="checkbox"/>

Select classifier

- Architecture
 - Analysis
 - WorkingHours
 - WH.Admin
 - WH.Engine
 - WH.File.Repository
 - WH.Import-Export
 - WH.RDBMS.Repository
 - Calculation
 - CalculationModell
 - Calendar Entry
 - Calendar Template
 - CalendarModell
 - Employee

Message Properties - Distribute Employee

General	Detail	Notes	Rules	Dependencies	Version Info
Action: <None>					
Control flow: Procedure Call					
Operation: Distribute Employee ID Set					
Arguments: Employee[], RUnit[]					
Return value: resultCode					

Operation Properties - Distribute Employee ID Set (distribut)

Notes	Rules	Related Diagrams	Dependencies
General	Parameters	Implementation	Mapping
Name			
Code			
Data Type			
Employee Set	employeeSet	Employee	
RUnit Set	rUnitSet	RUnit	

Parameter Properties - RUnit Set (rUnitSet)

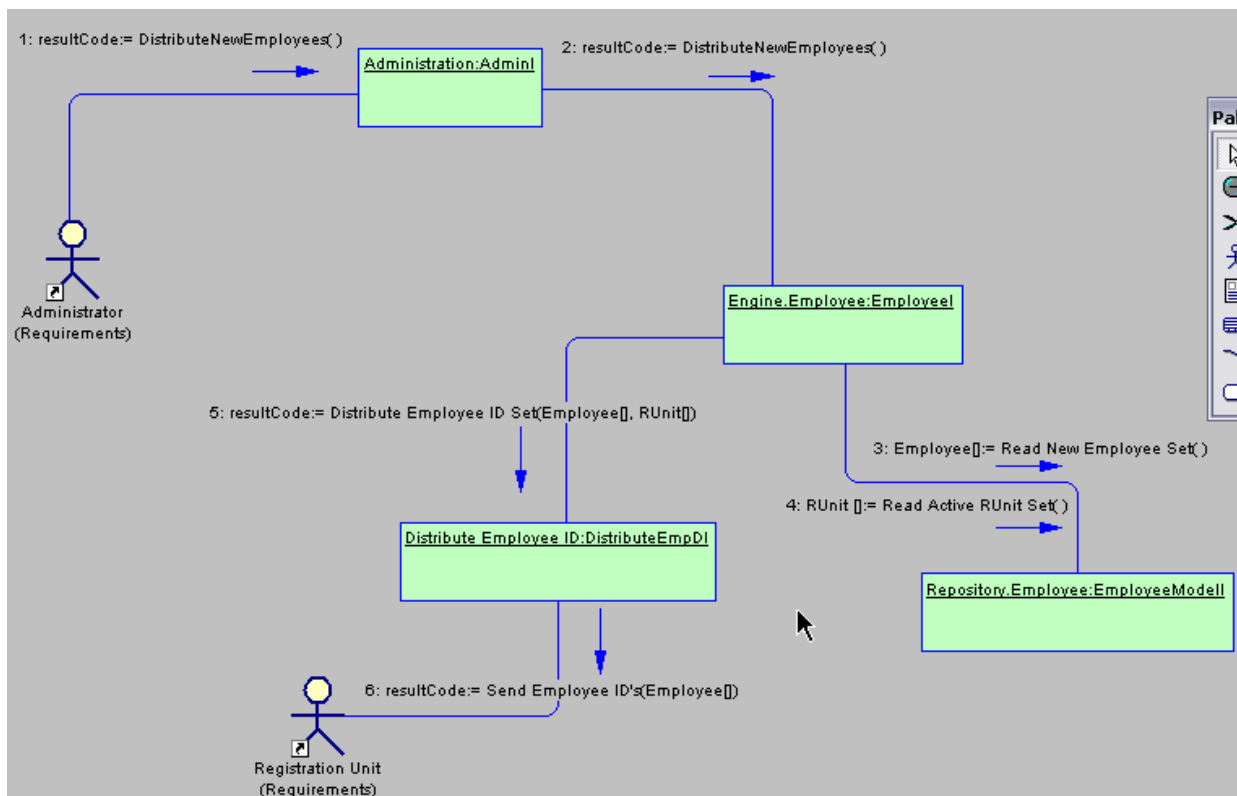
General
Parent: Distribute Employee ID Set
Name: RUnit Set
Code: rUnitSet
Comment: Set of Registration Units to address
Data type: RUnit
Array: <input checked="" type="checkbox"/>

Message Properties - Send Employee ID's (Send_Employee_ID_s)

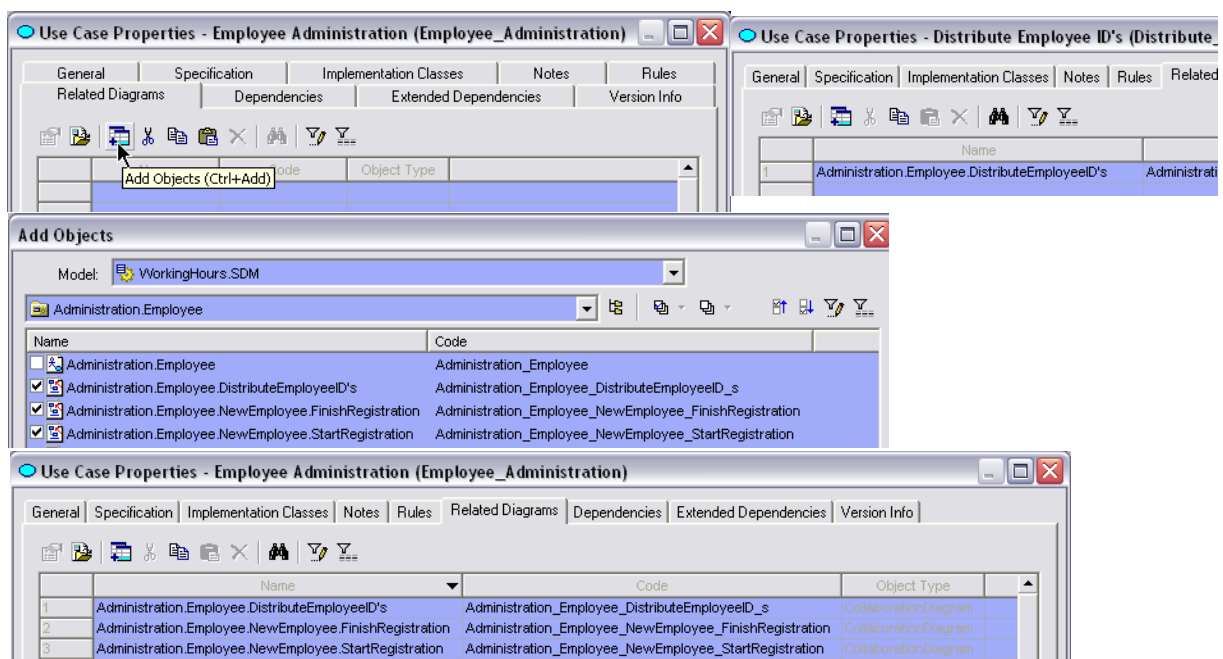
General	Detail	Notes	Rules	Dependencies	Version Info
Name: Send Employee ID's					
Code: Send_Employee_ID_s					
Comment: Send Set of Employee ID's to the particular Registration Unit					
Sequence number: 6					
Stereotype:					
Sender: Distribute Employee ID:DistributeEmpDI					
Receiver: Registration Unit (Shortcut)					

Message Properties - Send Employee ID

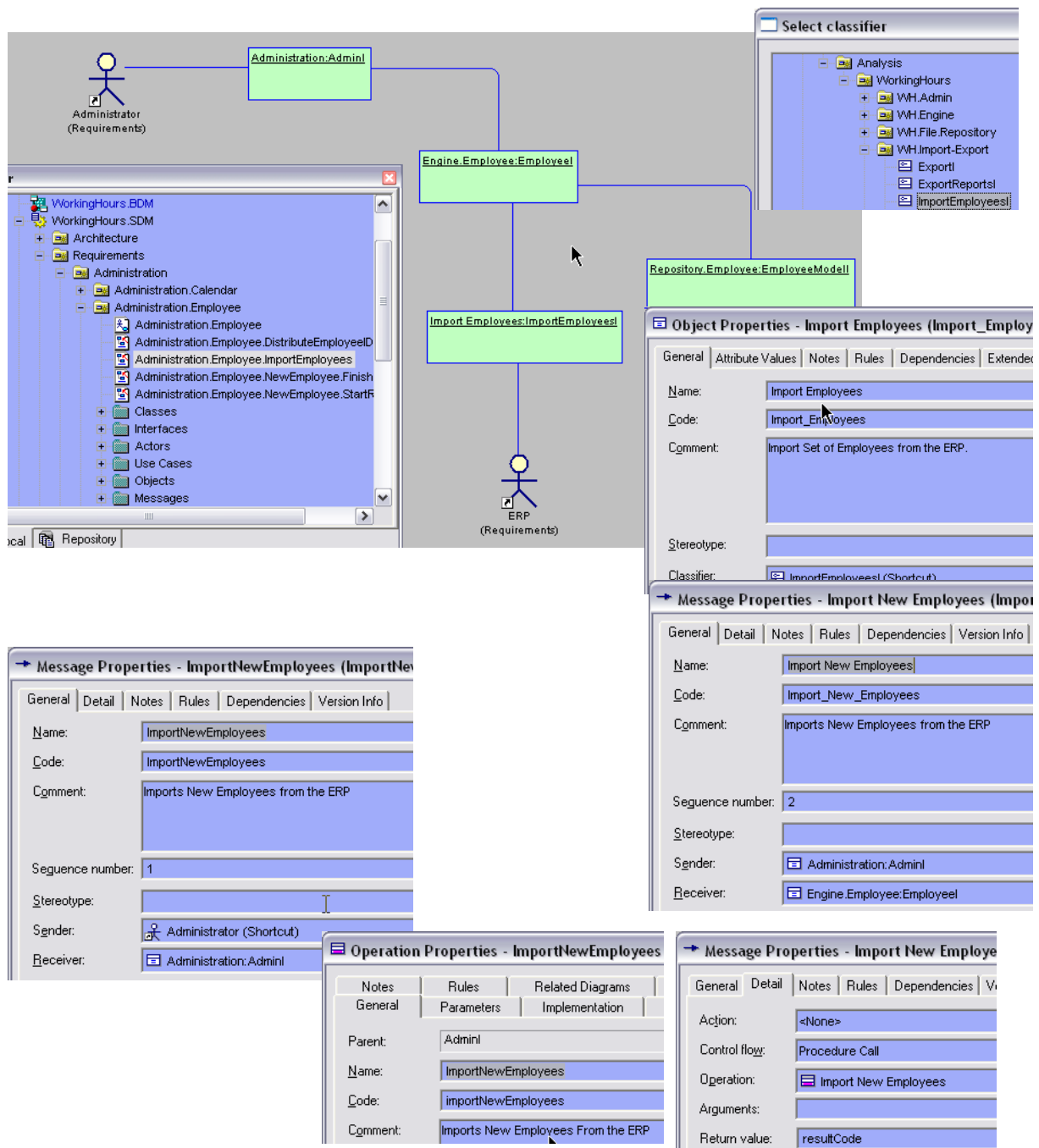
General	Detail	Notes	Rules	Dependencies
Action: <None>				
Control flow: Asynchronous				
Operation: <None>				
Arguments: Employee[]				
Return value: resultCode				
Predecessor list:				
Condition:				
Begin time:				
End time:				
<input checked="" type="checkbox"/> Support delay				



Povezivanje Dijagrama i Use Case



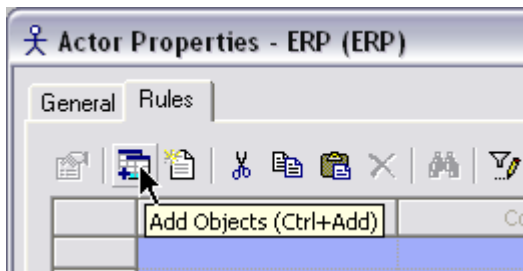
Import ID-ova zaposlenih,



The image displays seven screenshots from a UML modeling software interface, showing the configuration of various elements:

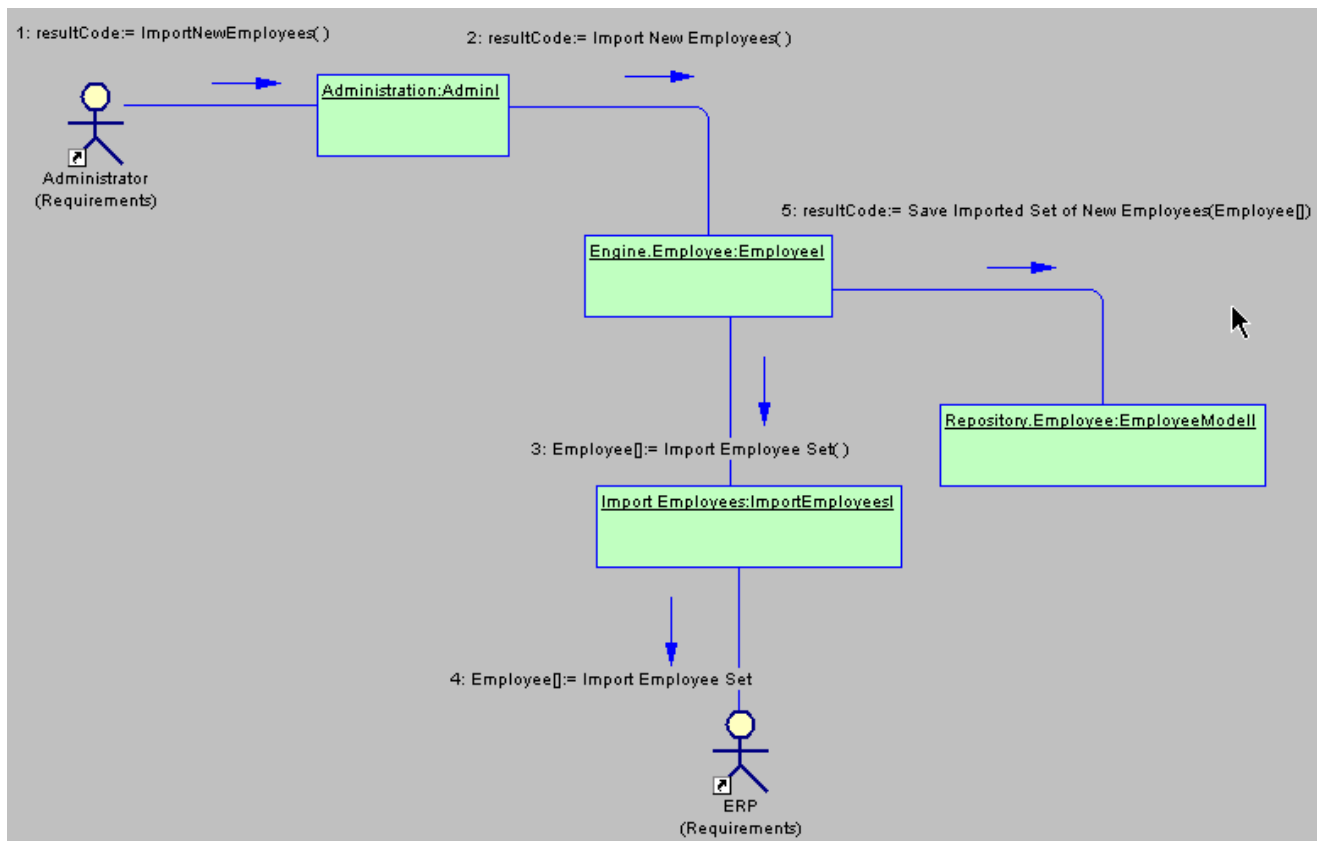
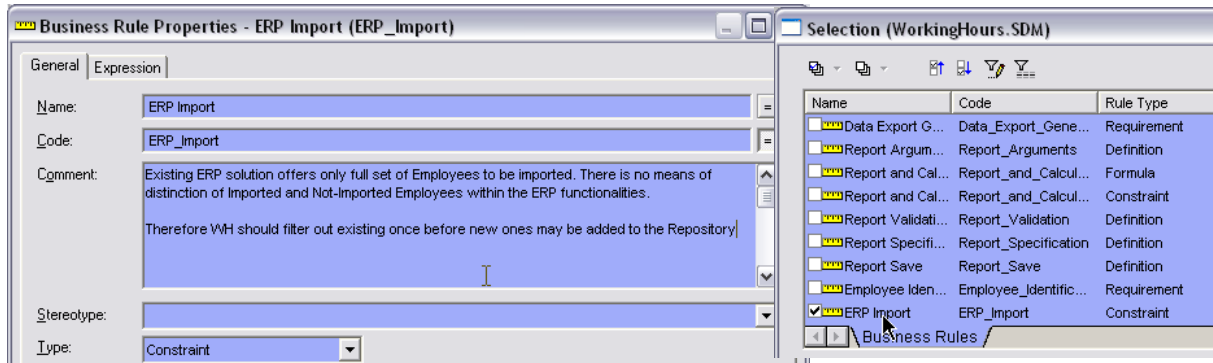
- Operation Properties - Import Employee Set (importEmployeeSet)**: Shows the general tab with fields for Name, Code, Comment, Stereotype, and Return type. The Return type is set to 'Employee'.
- Message Properties - Import Employee Set (Import Employee Set)**: Shows the general tab with fields for Name, Code, Comment, Sequence number, Stereotype, Sender, and Receiver. The Sender is 'Import Employees:ImportEmployeeSet' and the Receiver is 'ERP (Shortcut)'.
- Message Properties - Import Employee**: Shows the general tab with fields for Action, Control flow, Operation, Arguments, Return value, Predecessor list, Condition, Begin time, and End time. The Return value is 'Employee[]'.
- Parameter Properties - EmployeeSet (employeeSet)**: Shows the general tab with fields for Name, Code, Comment, and Data type. The Data type is 'Employee'.
- Message Properties - Save Imported Set of New Employees (Save Imported Set of New Employees)**: Shows the general tab with fields for Name, Code, Comment, Sequence number, Stereotype, Sender, and Receiver. The Sender is 'Engine.Employee:Employee' and the Receiver is 'Repository.Employee:EmployeeModell'.
- Message Properties - Save Imported Set of New Employees (Save Imported Set of New Employees)**: Shows the general tab with fields for Name, Code, Comment, Sequence number, Stereotype, Sender, and Receiver. The Sender is 'Engine.Employee:Employee' and the Receiver is 'Repository.Employee:EmployeeModell'.
- Operation Properties - Save Imported Set of New Employees (saveNewEmployees)**: Shows the general tab with fields for Name, Code, Comment, and Return type. The Return type is 'resultCode'.

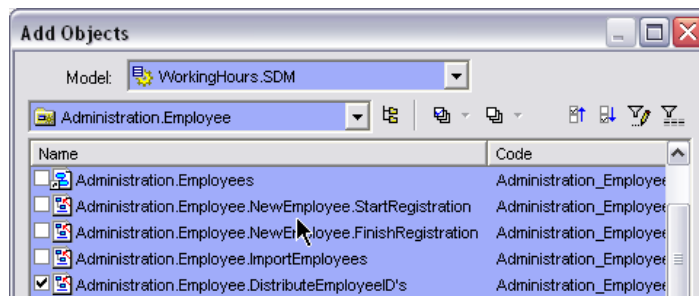
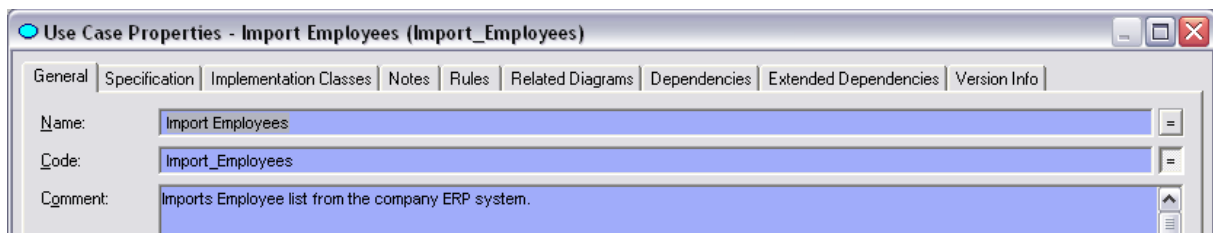
Import ID-ova zaposlenih



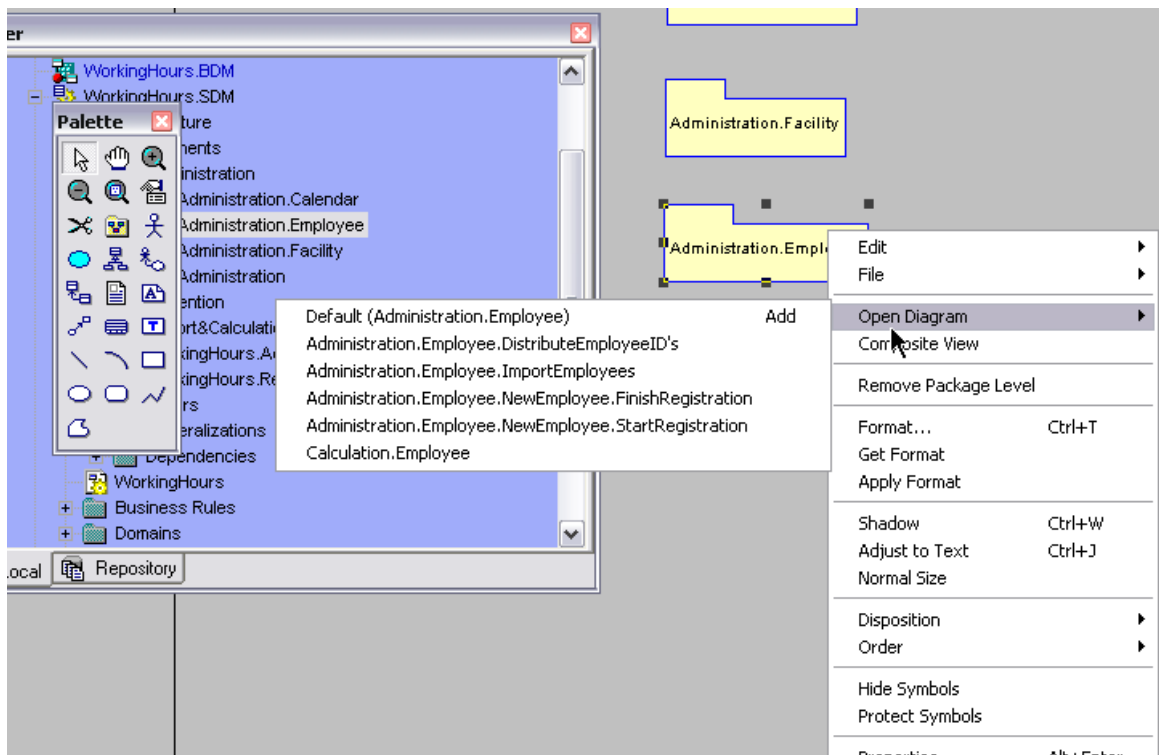
ERP ograničenje je da se ne mogu razlikovati zapisi koji su već Eksportovani od novih

- Stara tehnologija, zatvoreno rešenje, nedostatak ekspertize (znanja),





- Krajnji Rezultat – povezivanje



Administration.Employee.DistributeEmployeeID's
Administration.Employee.NewEmployee.FinishRegistration
Administration.Employee.NewEmployee.StartRegistration

Use Case Properties - Employee Administration (Employee_Administration)

General | Specification | Implementation Classes | Notes | Rules | Related Diagrams | Dependencies | Extended Dependencies | Version Info

Impact Analysis...

Short Description	Parent	Model
Instance Link 'Administration.Admin - Engine.Employee:Employee'	Package 'Administration.Employee'	WorkingHours.SDM
Message '2: resultCode:= Distribucija Employee ID's'	Package 'Administration.Employee'	WorkingHours.SDM
Instance Link 'Engine.Employee:Employee - Repository.Employee:EmployeeModell'	Package 'Administration.Employee'	WorkingHours.SDM
Message '4: RUnit []:= Read Active RUnit Set'	Package 'Administration.Employee'	WorkingHours.SDM
Message '3: Employee[]:= Reads Set of Newly Added Employee'	Package 'Administration.Employee'	WorkingHours.SDM
Instance Link 'Administration.Admin - Administration.Admin'	Package 'Administration.Employee'	WorkingHours.SDM
Message '1: resultCode:= Distribucija Employee ID's'	Package 'Administration.Employee'	WorkingHours.SDM
Instance Link 'Distribute Employee ID:DistributeEmpDI - Registration Unit'	Package 'Administration.Employee'	WorkingHours.SDM
Message '6: resultCode:= Send Employee ID's(Employee[])'	Package 'Administration.Employee'	WorkingHours.SDM
Instance Link 'Engine.Employee:Employee - Distribute Employee ID:DistributeEmpDI'	Package 'Administration.Employee'	WorkingHours.SDM
Message '5: resultCode:= Distribute Employee Set(Employee[], RUnit[])'	Package 'Administration.Employee'	WorkingHours.SDM
Object 'Administration.Admin'	Package 'Administration.Employee'	WorkingHours.SDM
Object 'Engine.Employee:Employee'	Package 'Administration.Employee'	WorkingHours.SDM

Objects in Related Diagrams | Influent Objects | Primary Associations | Diagrams

<< Less | OK | Cancel | Apply | Help

VEŽBANJE

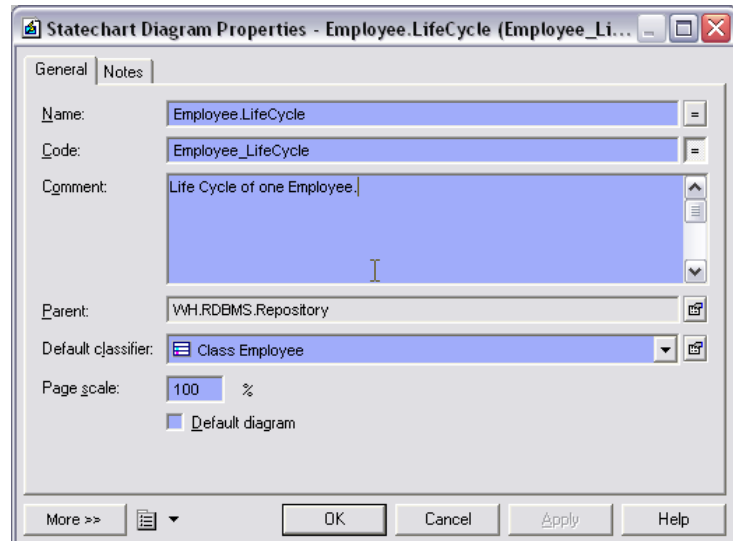
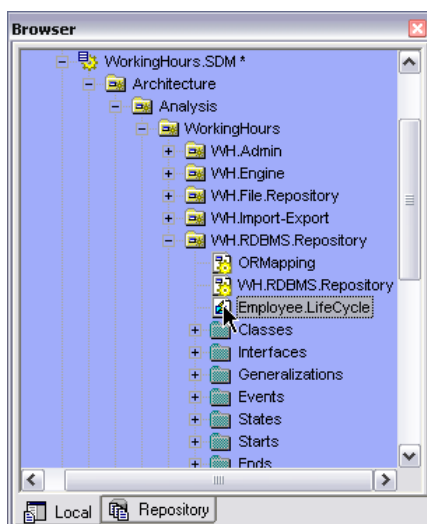
- Pokušajte da uradite Kolaboracione dijagrame za Administration.Facility
- Pokušajte da uradite Kolaboracione dijagrame za Administration.Calendar (opciono)
- Pokušajte da uradite Kolaboracione dijagrame za Report&Calculation (opciono)

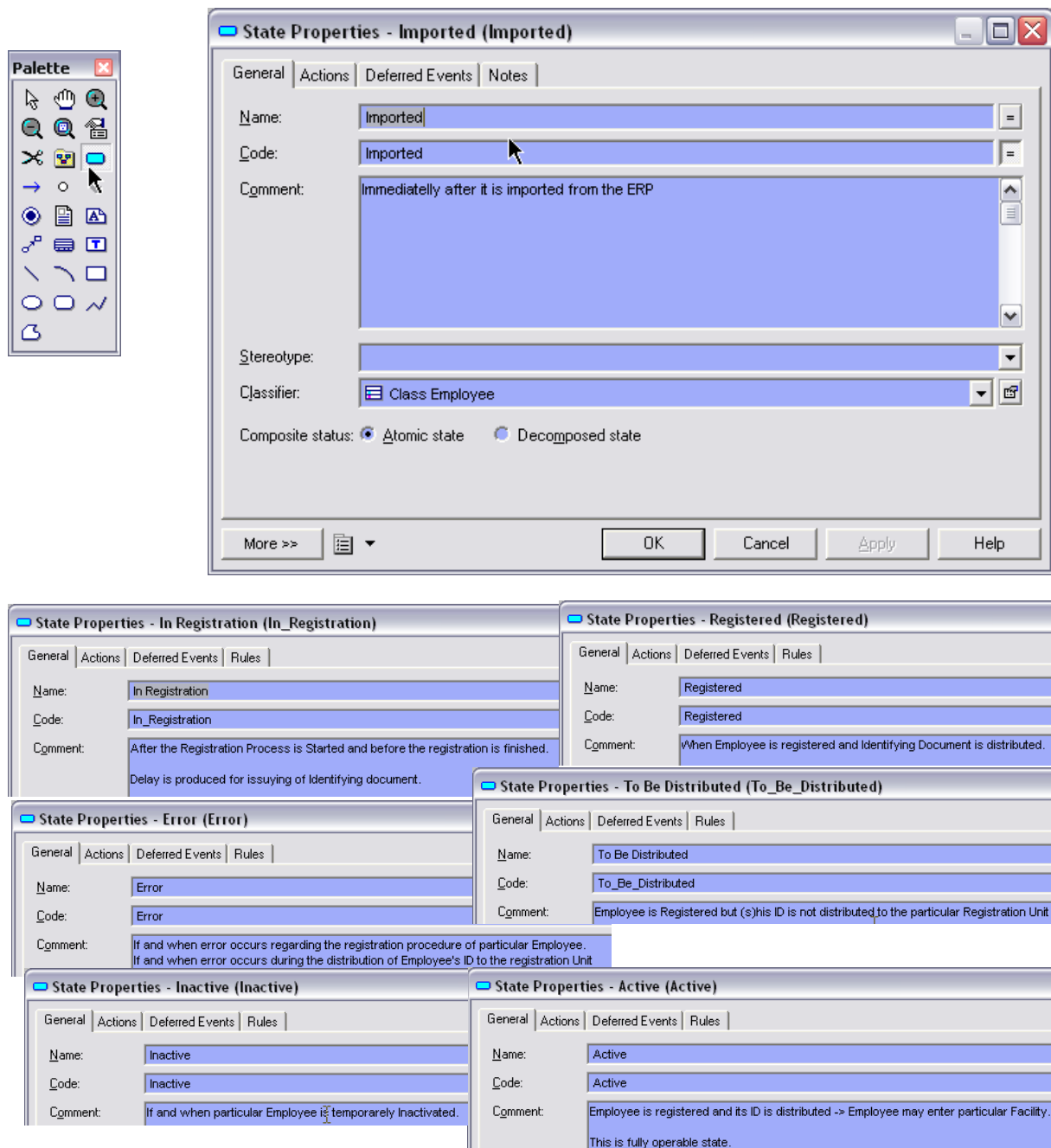
VALIDACIJA ZAHTEVA

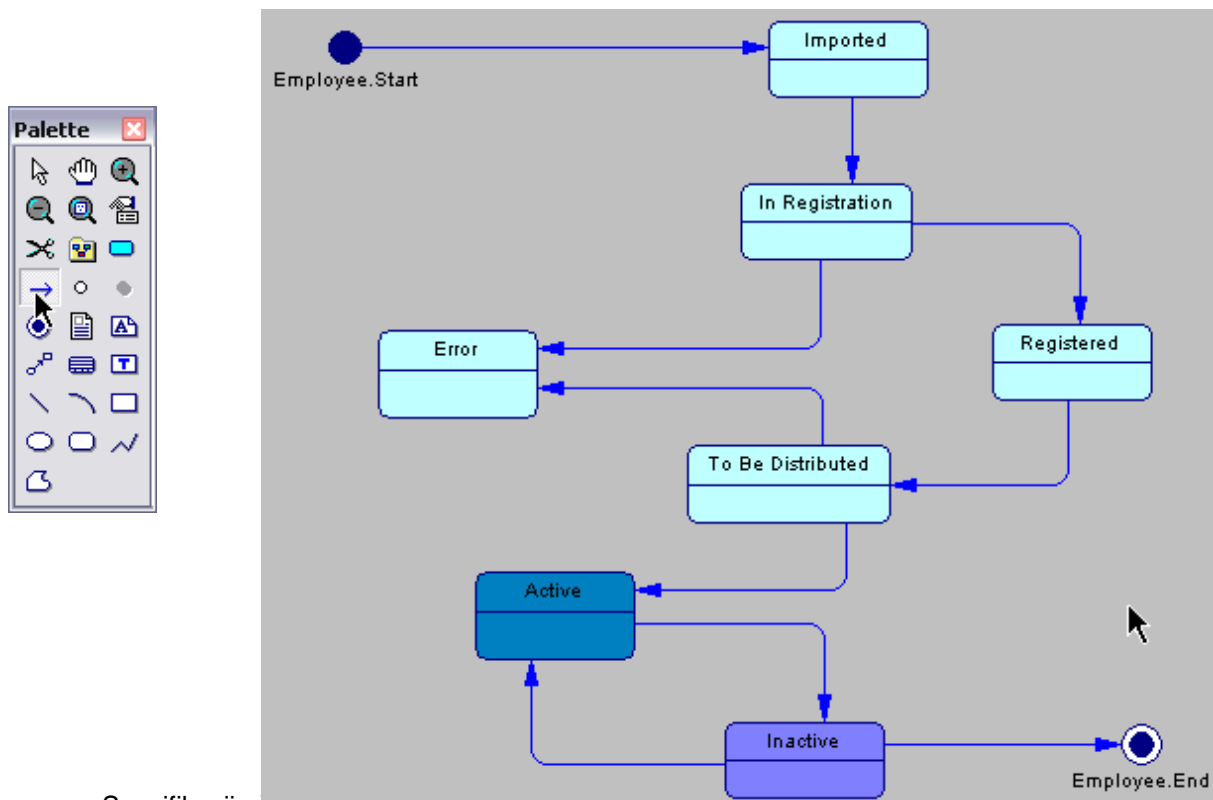
- Nastavak analize sistema – elaboracija,
 - Elaboracija Arhitekture sistema,
 - Promocija poruka kolaboracije u metode,
 - Alokacija metoda na Interfejsima,
 - Specifikacija interfejsa i metoda,
 - Specifikacija dinamike sistema
 - Složeni Algoritmi Obrade,
 - Složena stanja pojedinih Entiteta,

Elaboracija Arhitekture

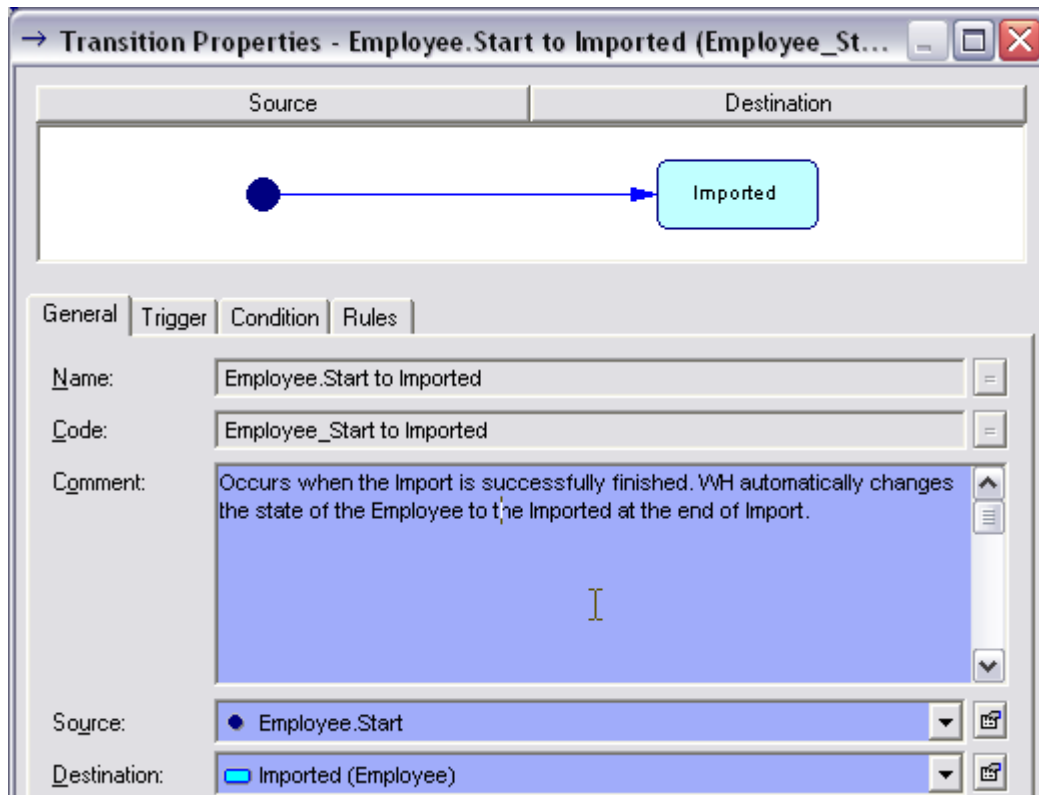
- Specifikacija složenih stanja pojedinih entiteta,
 - U prethodnom vežbanju su uočena stanja
 - Entiteta Zaposleni i Registraciona Jedinica
 - Specifikacija uz pomoć UML dijagrama stanja,
- Specifikacija Složenih Algoritama
 - Obračun radnih sati
 - Prikaz obračuna za jednog zaposlenog na mesečnom nivou,
 - Specifikacija uz pomoć UML dijagrama aktivnosti,
- **Specifikacija životnog ciklusa Zaposleni,**

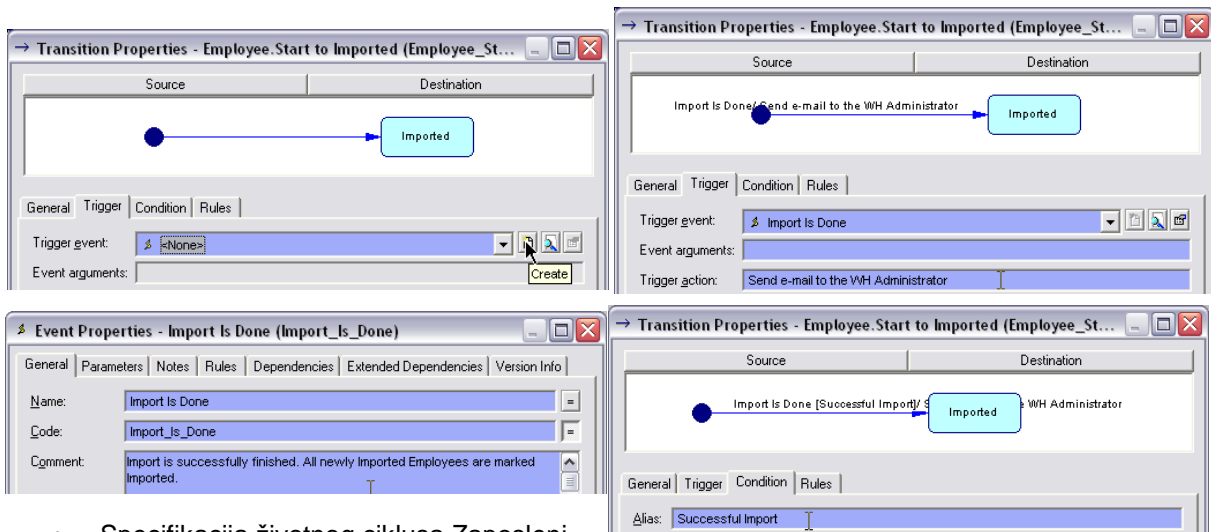




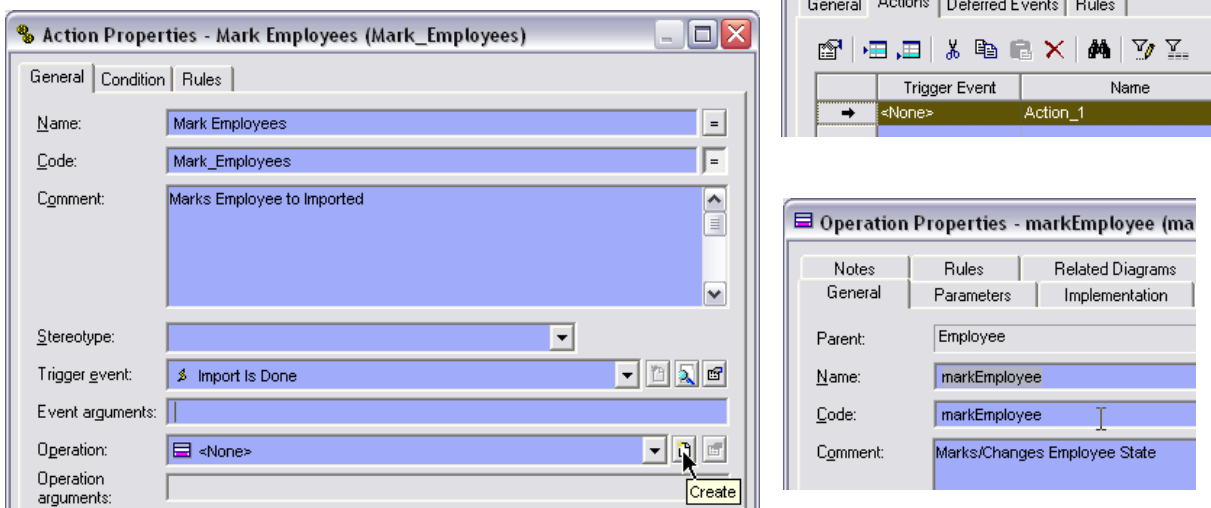


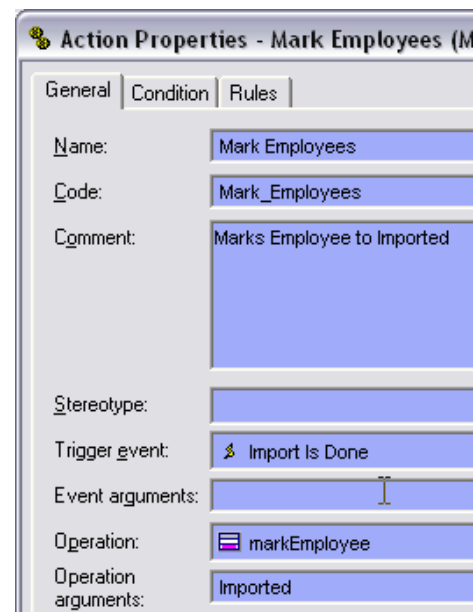
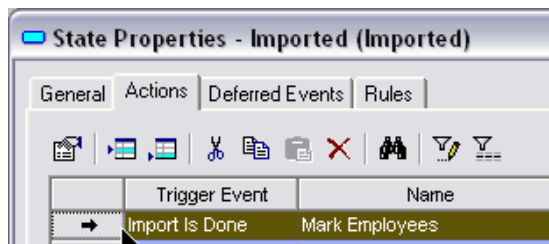
- Specifikacija životnog ciklusa zaposlenih,
 - Elaboracija tranzicije



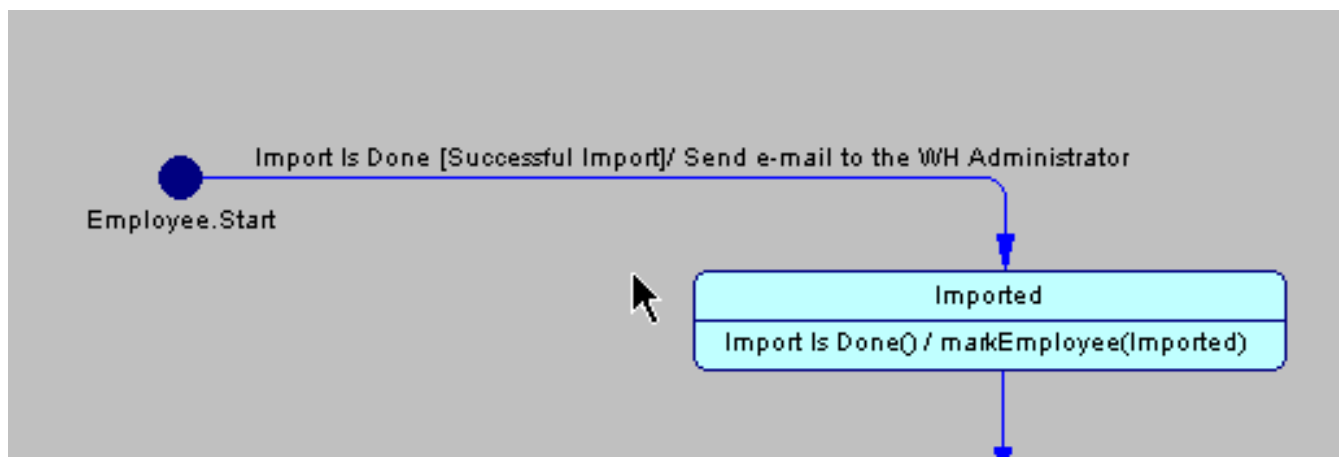


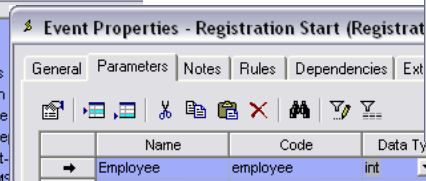
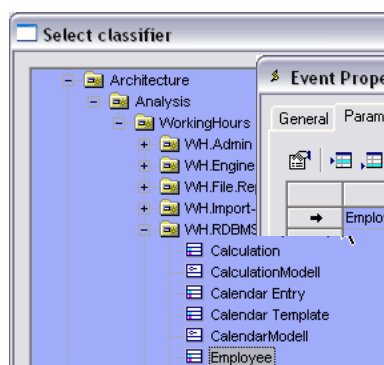
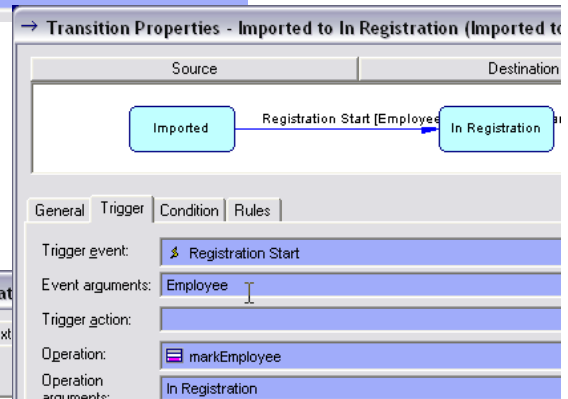
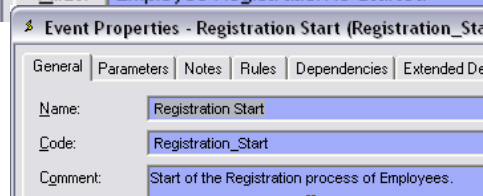
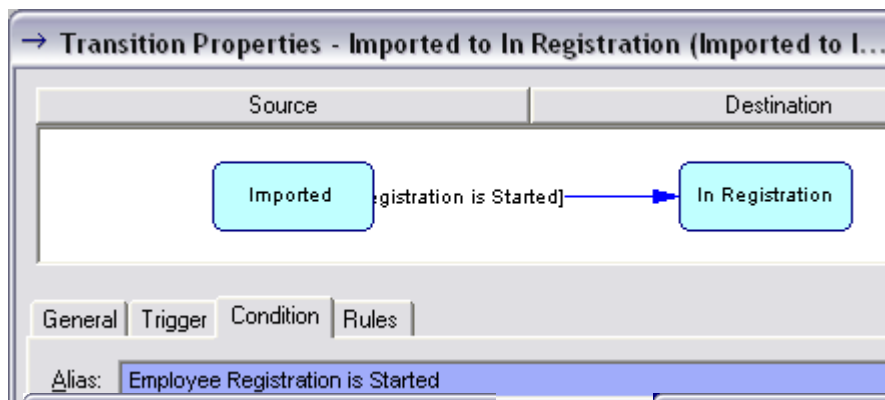
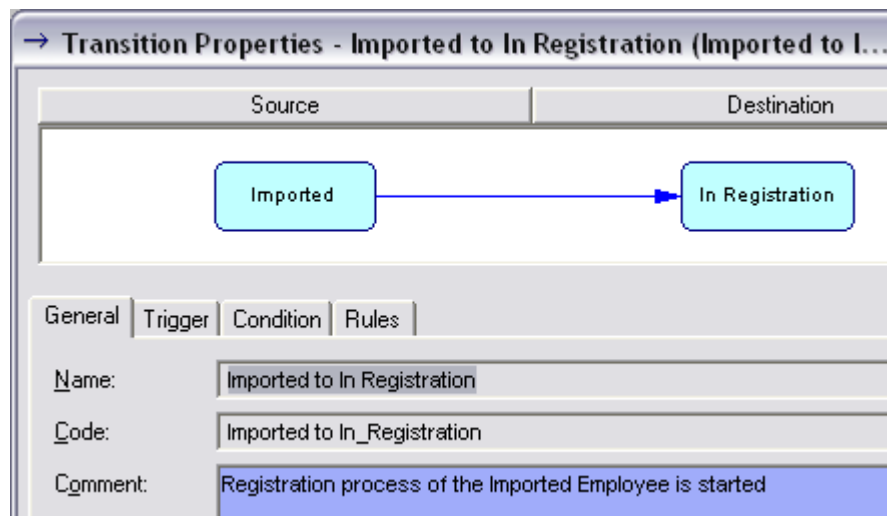
- Specifikacija životnog ciklusa Zaposleni,
 - Elaboracija stanja

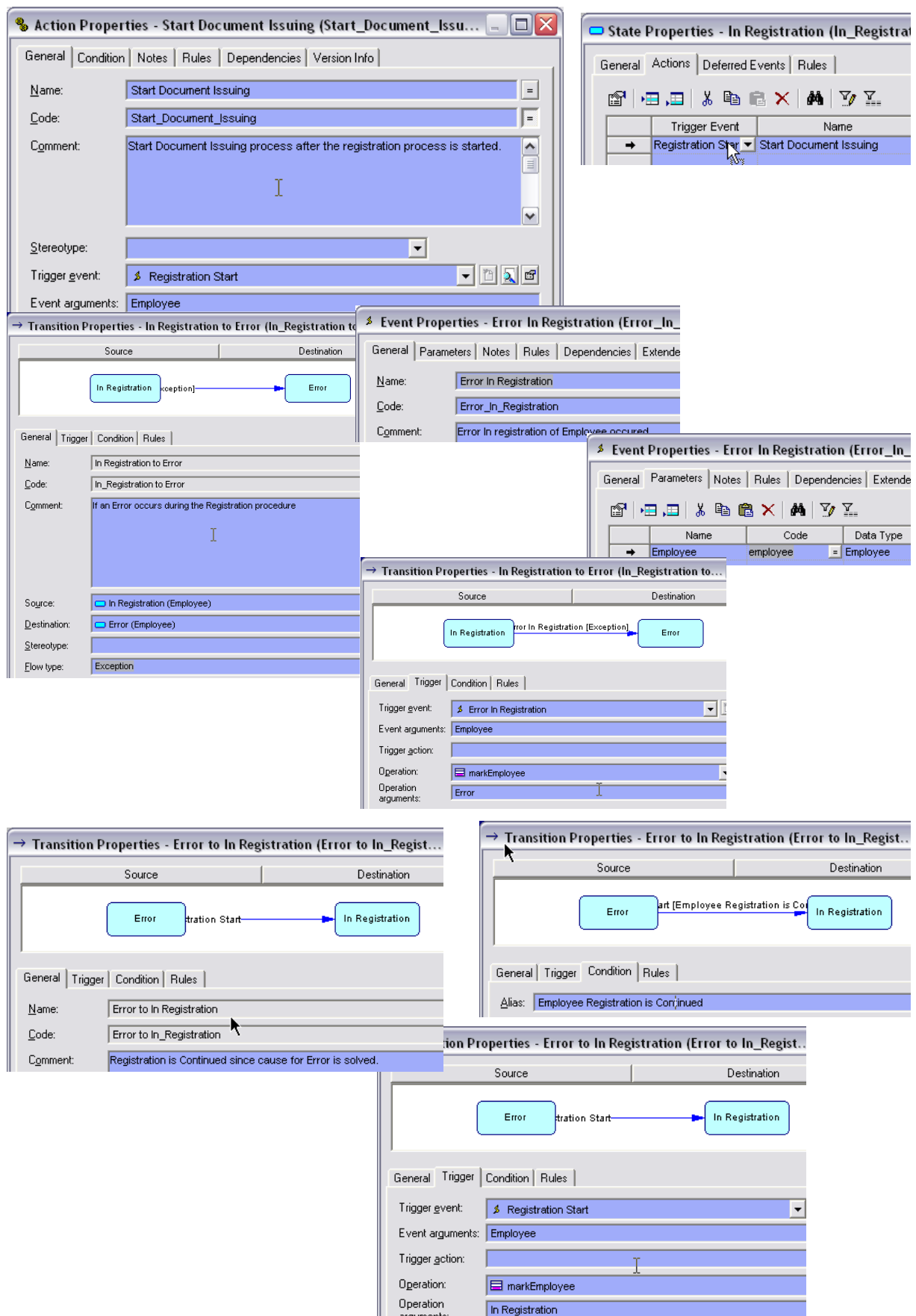


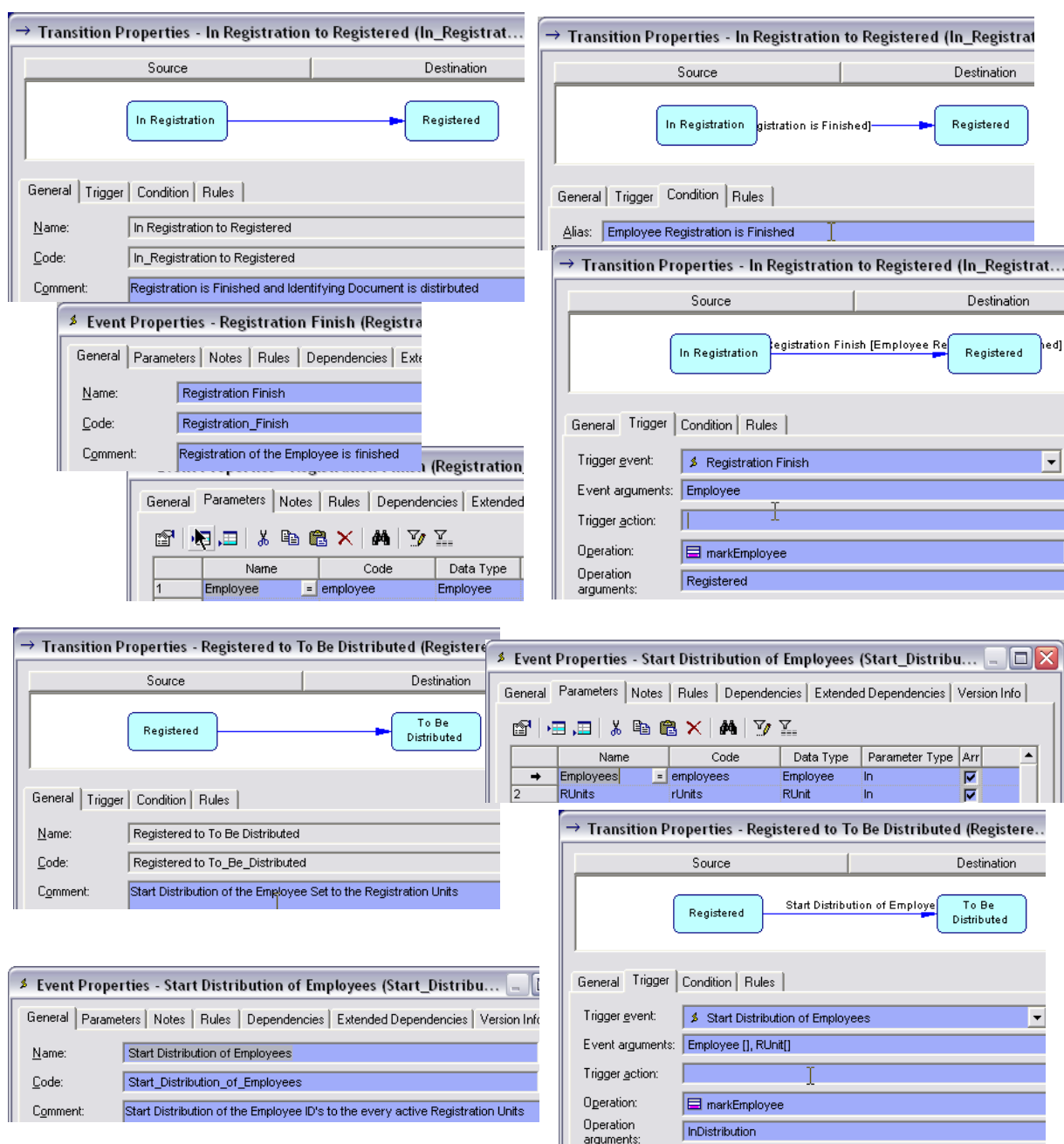


- Specifikacija životnog ciklusa Zaposleni,
 - Elaboracija tranzicije i stanja - prezentacija









The diagram shows a state machine with two states: **InDistribution** and **Error**. A transition labeled **exception** leads from **InDistribution** to **Error**. The **InDistribution** state has an action **Distribute ID's** triggered by the event **Start Distribution of Employees** with arguments **Employee [], RUnit[]**. The **Error** state has an event **Error In Distribution** with code **Error_In_Distribution** and comment **Error In Distribution of Employee occurred.**

Action Properties - Distribute ID's (Distribute_ID_s)

General	Condition	Notes	Rules	Dependencies	Version Info
Name:	Distribute ID's				
Code:	Distribute_ID_s				
Comment:	Distribute ID's of new Employee records to every Registration Unit				
Stereotype:					
Trigger event:	Start Distribution of Employees				
Event arguments:	Employee [], RUnit[]				
Operation:	<None>				
Operation arguments:					

State Properties - InDistribution (InDistribution)

General	Actions	Deferred Events	Rules
Name:	InDistribution		
Employee is Registered but (s)his ID is not distributed to the particular Registration Unit			

Transition Properties - InDistribution to Error (InDistribution to Error)

General	Trigger	Condition	Rules
Name:	InDistribution to Error		
Code:	InDistribution to Error		
Comment:	If an Error occurs during the Distribution of the Employee 's		
Source:	InDistribution (Employee)		
Destination:	Error (Employee)		
Stereotype:			
Flow type:	Exception		

Event Properties - Error In Distribution (Error In Distribution)

General	Parameters	Notes	Rules	Dependencies	External
Name:	Error In Distribution				
Code:	Error_In_Distribution				
Comment:	Error In Distribution of Employee occurred.				

Event Properties - Error In Distribution (Error In Distribution)

General	Parameters	Notes	Rules	Dependencies	External
Name	Employee	employee	=	Employee	

→ Transition Properties - Error to InDistribution (Error to InDistribu..

General | Trigger | Condition | Rules |

Name: Error to InDistribution

Code: Error to InDistribution

Comment: Distribution is Continued since cause for Error is solved.

→ Transition Properties - Error to InDistribution (Error to InDistribu..

General | Trigger | Condition | Rules |

Trigger event: Start Distribution of Employees

Event arguments: Employee

Trigger action:

→ Transition Properties - Error to InDistribution (Error to InDistribu..

General | Trigger | Condition | Rules |

Alias: Employee Distribution is Continued

→ Transition Properties - InDistribution to Active (InDistribution to ...

General | Trigger | Condition | Rules |

Name: InDistribution to Active

Code: InDistribution to Active

Comment: Distribution is Finished

→ Transition Properties - InDistribution to Active (InDistribution to ...

General | Trigger | Condition | Rules |

Alias: Successful Distribution

Event Properties - Registration Is Activated (Registration_Is_Acti...

General | Parameters | Notes | Rules | Dependencies | Extended Dependencies | Version Inf

Name: Registration Is Activated

Code: Registration_Is_Activated

Comment: Employee Registration Is Activated and (s)he may start to use the facilities

Event Properties - Registration Is Activated (Registration_Is_Acti...

General | Parameters | Notes | Rules | Dependencies | Extended Dependencies | Versi

Name	Code	Data Type	Parameter Type	Arr
Employee	employee	Employee	In	<input checked="" type="checkbox"/>

General | Trigger | Condition | Rules |

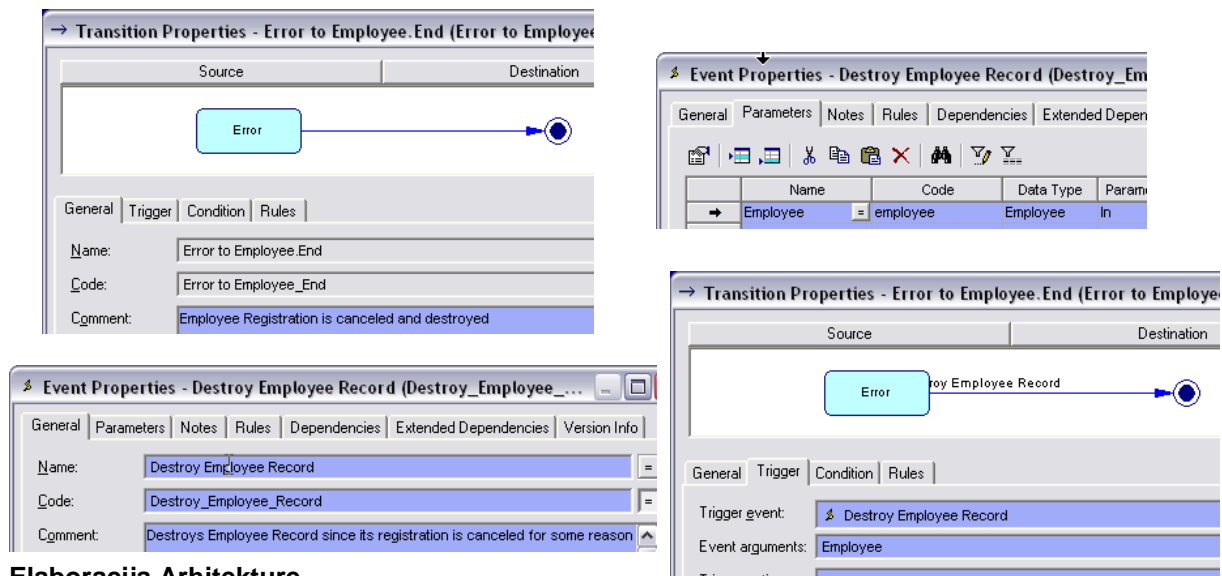
Trigger event: Registration Is Activated

Event arguments: Employee[]

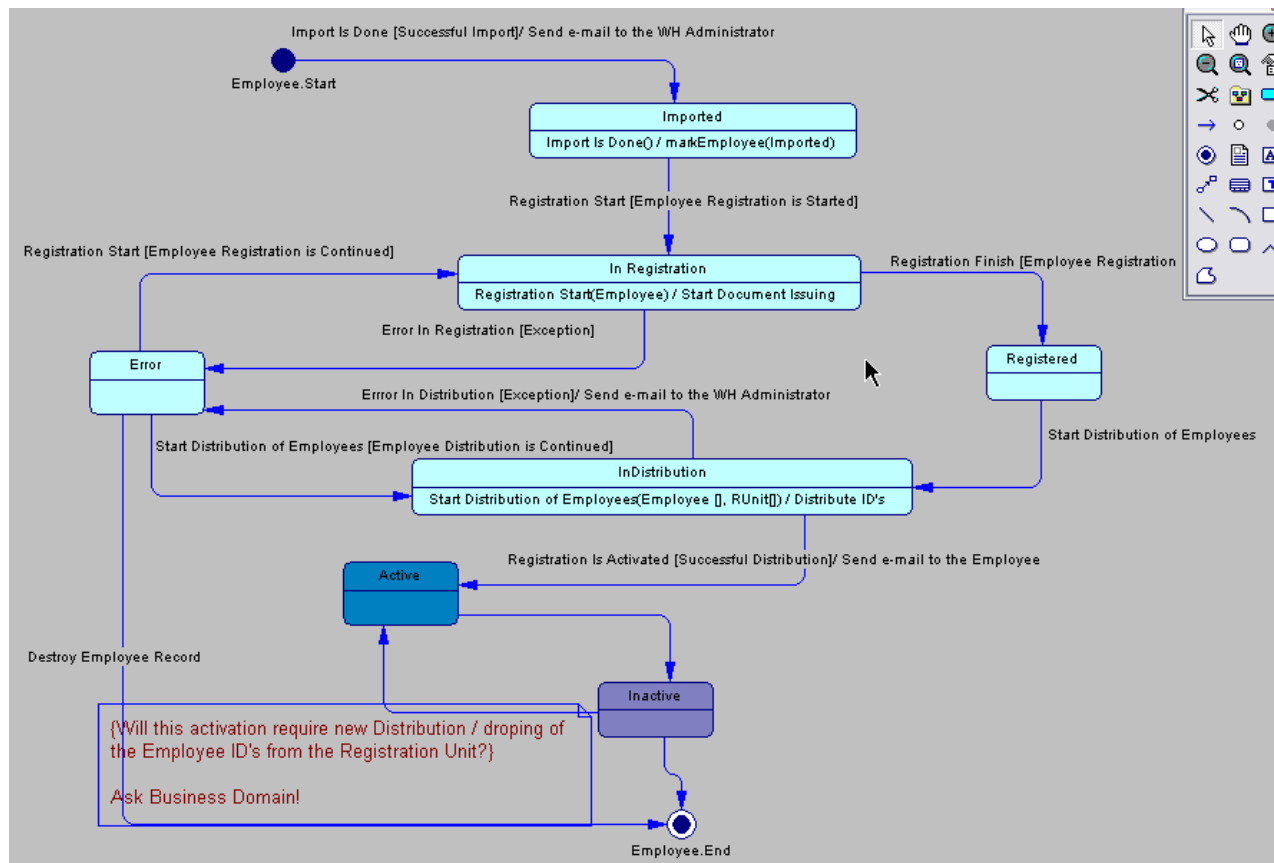
Trigger action: Send e-mail to the Employee

Operation: markEmployee

Operation arguments: Active

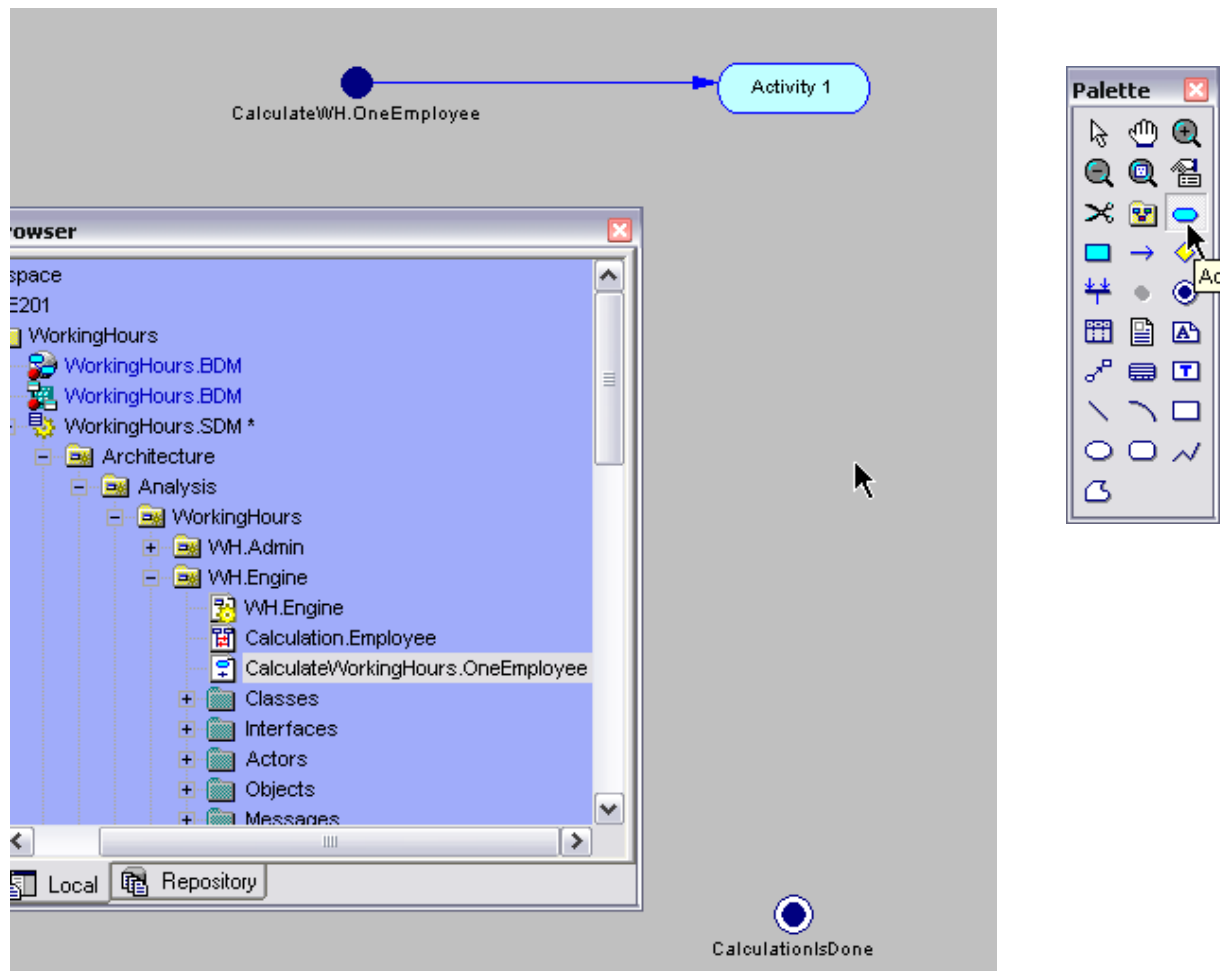


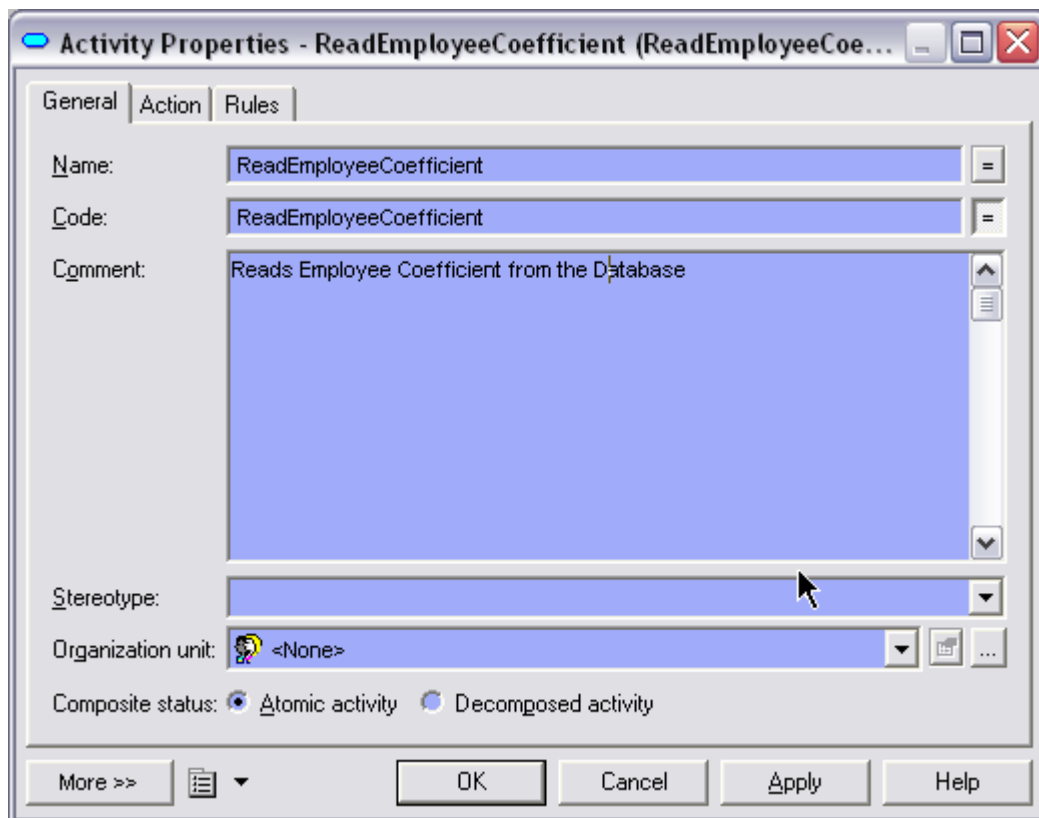
Elaboracija Arhitekture



- Specifikacija Algoritma Kalkulacije
 - Obračun radnih sati zaposlenog na osnovu evidencije,
 - Normiranje radnih sati upotrebom faktora
 - Funkcija koju Zaposlenih obavlja, vrsta radnog vremena kada je posao obavljen,
 - Obračun normiranih radnih sati kao osnov za obračun nadoknade/primanja,
- Upotreba UML dijagrama aktivnosti,

- Opis Interface CalculatorI,





→ Transition Properties - CalculateWH.OneEmployee to ReadEmployee...

Source	Destination
	ReadEmployee Coefficient

General Condition Rules

Name: CalculateWH.OneEmployee to ReadEmployeeCoefficient

Code: CalculateWH_OneEmployee to ReadEmployeeCoefficient

Comment: Starts Calculation of the Working Hours for one Employee.
Arguments are:
Employee ID, Start Date, End Date

Source: CalculateWH.OneEmployee

Destination: ReadEmployeeCoefficient

Stereotype:

Flow type:

More >> OK Cancel Apply Help

End Properties - SystemError (SystemError)

General Rules

Name: SystemError

Code: SystemError

Comment: May occur either because of the resource access Exception or any other System related Exception

→ Transition Properties - ReadEmployeeCoefficient to SystemError

Source	Destination
ReadEmployee Coefficient	

General Condition Rules

Name: ReadEmployeeCoefficient to SystemError

Code: ReadEmployeeCoefficient to SystemError

Comment: Exception accessing the repository

Source: ReadEmployeeCoefficient

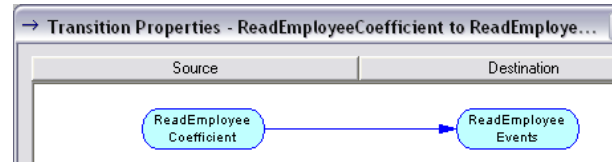
Destination: SystemError

Stereotype:

Flow type: Exception

Activity Properties - ReadEmployeeEvents (ReadEmployeeEvents)

General	Action	Rules
Name:	ReadEmployeeEvents	
Code:	ReadEmployeeEvents	
Comment:	Reads all the Event of the particular Employee within the particular time span. Arguments are: Employee ID, Start and End Date	



Transition Properties - ReadEmployeeEvents to SystemError (ReadEmployeeEvents to SystemError)

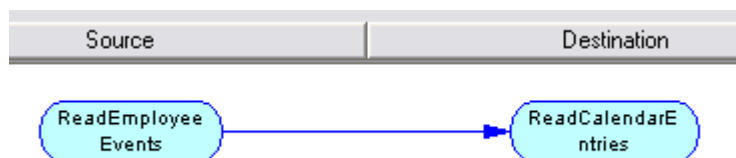
Source	Destination
ReadEmployeeEvents	SystemError

ReadEmployeeEvents [exception]

General	Condition	Rules
Name:	ReadEmployeeEvents to SystemError	
Code:	ReadEmployeeEvents to SystemError	
Comment:	Exception accessing the repository	
Source:	ReadEmployeeEvents	
Destination:	SystemError	
Stereotype:		
Flow type:	Exception	

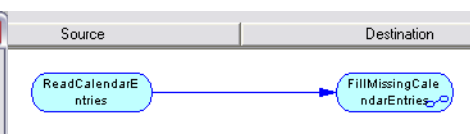
Activity Properties - ReadCalendarEntries (ReadCalendarEntries)

General	Action	Rules
Name:	ReadCalendarEntries	
Code:	ReadCalendarEntries	
Comment:	Reads all the Entries from the calendar within the particular time span. Arguments are: Start and End Date	



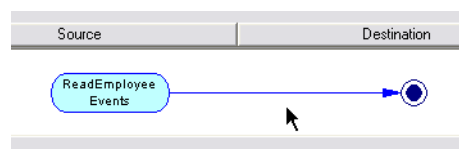
Activity Properties - FillMissingCalendarEntries (FillMissingCale...

General	Action	Sub-Activities	Rules
Name:	FillMissingCalendarEntries		
Code:	FillMissingCalendarEntries		
Comment:	Fills all the missing Events to fill treated domain. Every day within the domain should have at least usual working hours Entry. Look at the decomposed activity		
Stereotype:			
Organization unit:	<None>		
Composite status:	<input type="radio"/> Atomic activity <input checked="" type="radio"/> Decomposed activity		
More >> OK Cancel Apply Help			



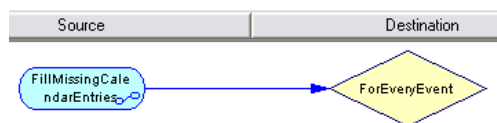
End Properties - ResultSetsEmpty (ResultSetsEmpty)

General	Rules
Name:	ResultSetsEmpty
Code:	ResultSetsEmpty
Comment:	If we do not have any User Entrance or Exit within the period.



Decision Properties - ForEveryEvent (ForEveryEvent)

General	Condition	Rules
Name:	ForEveryEvent	
Code:	ForEveryEvent	
Comment:	For loop for Every Event within the Employee Event set	

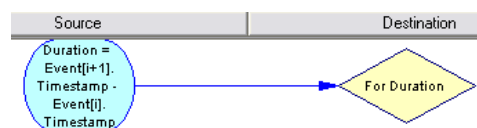


Decision Properties - For Duration (For_Duration)

General	Condition	Rules
Name:	For Duration	
Code:	For_Duration	
Comment:	Within the calculated period (duration)	

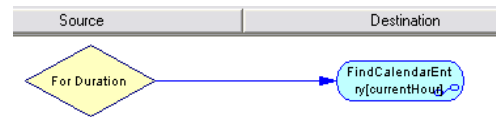
Activity Properties - Duration = Event[i+1].Timestamp - Event[i].Timestamp - Ever

General	Action	Rules
Name:	Duration = Event[i+1].Timestamp - Event[i].Timestamp	
Code:	Duration__Eventi_1_Timestamp__Eventi_Timestamp	
Comment:	Calculates Duration of the Employee working hours	



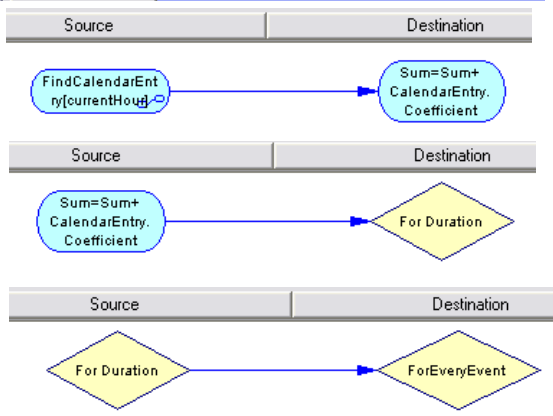
Activity Properties - FindCalendarEntry[currentHour] (FindCalen...

General	Action	Sub-Activities	Rules
Name: FindCalendarEntry[currentHour] Code: FindCalendarEntrycurrentHour Comment: Find Calendar Entry to which Current Hour/Time Belongs Stereotype: Organization unit: <None> Composite status: <input type="radio"/> Atomic activity <input checked="" type="radio"/> Decomposed activity			
More >> OK Cancel Apply Help			



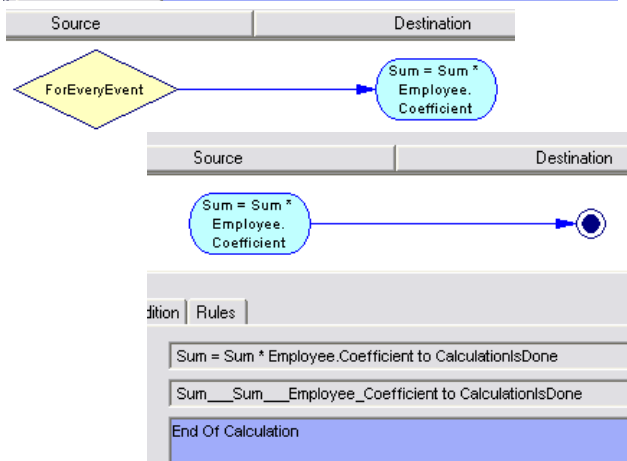
Activity Properties - Sum=Sum+CalendarEntry.Coefficient

General	Action	Rules
Name: Sum=Sum+CalendarEntry.Coefficient Code: Sum_Sum_CalendarEntry_Coefficient Comment: Add the Calendar Entry Coefficient to the whole sum		



Activity Properties - Sum = Sum * Employee.Coefficient (Sum_...

General	Action	Rules
Name: Sum = Sum * Employee.Coefficient Code: Sum_Sum_Employee_Coefficient Comment: Multiply all added working hours with the Employee Coefficient		



VEŽBANJE

- Za vežbu samostalno uradite:
 - dijagram Stanja za Entitet RUnit,
 - dijagram Aktivnosti za:
 - FillMissingCalendarEntries i FindCalendarEntry