Universidad de Granada

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Practical Process Mining (II)

Master CD&IC

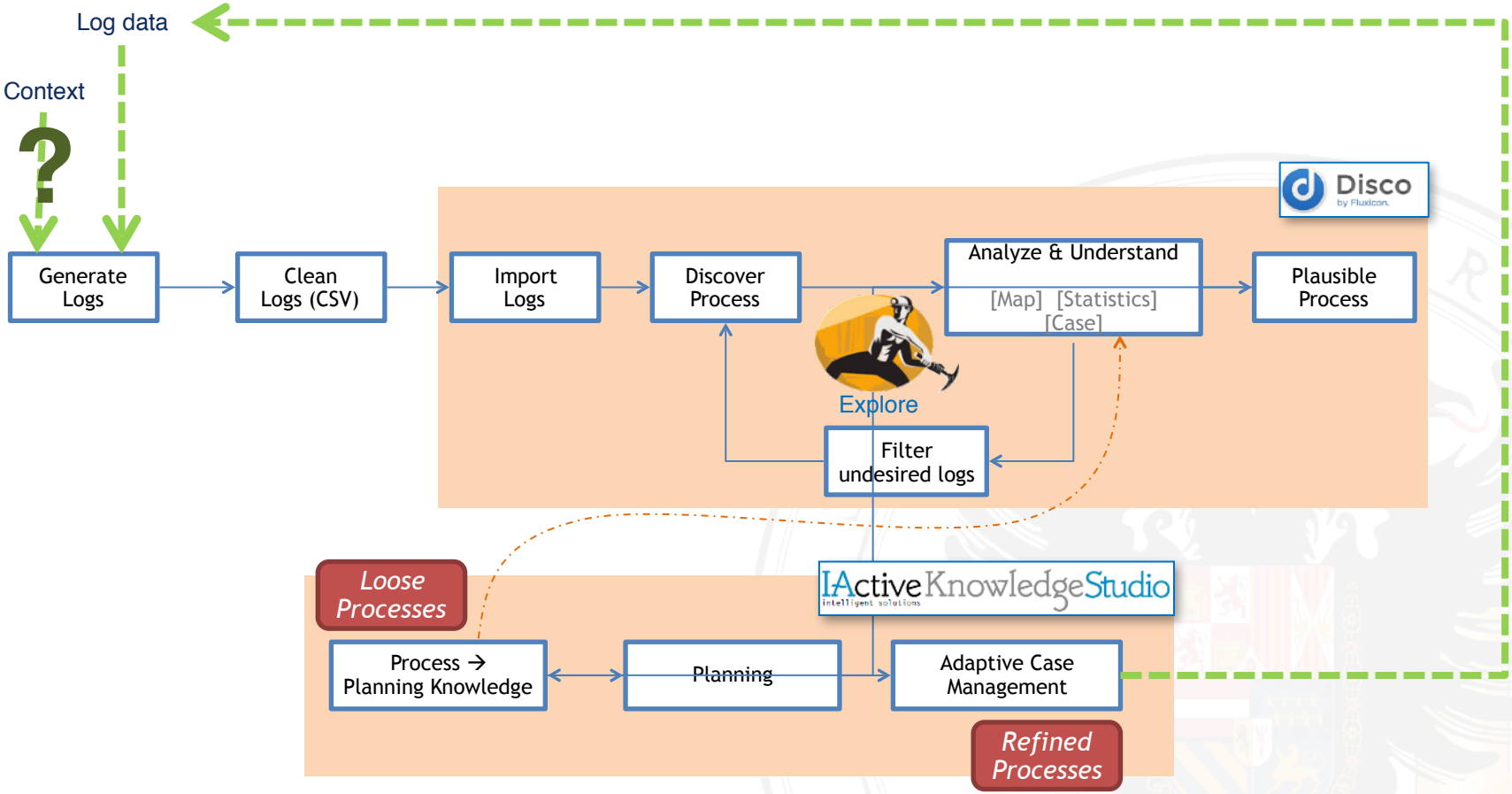
Luis Castillo Vidal

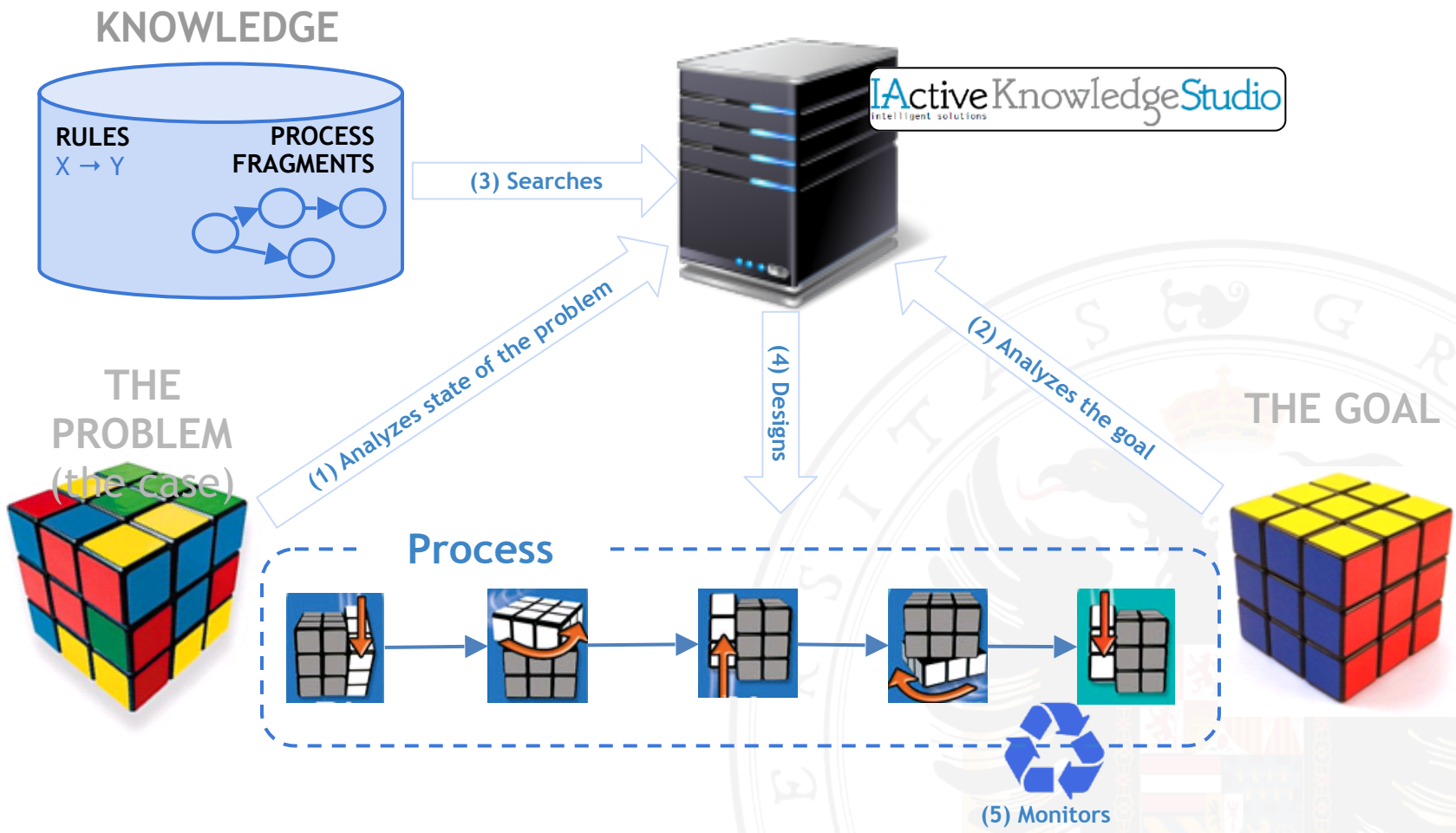
l.castillo@decsai.ugr.es Skype: l.castillovidal

DECSAI

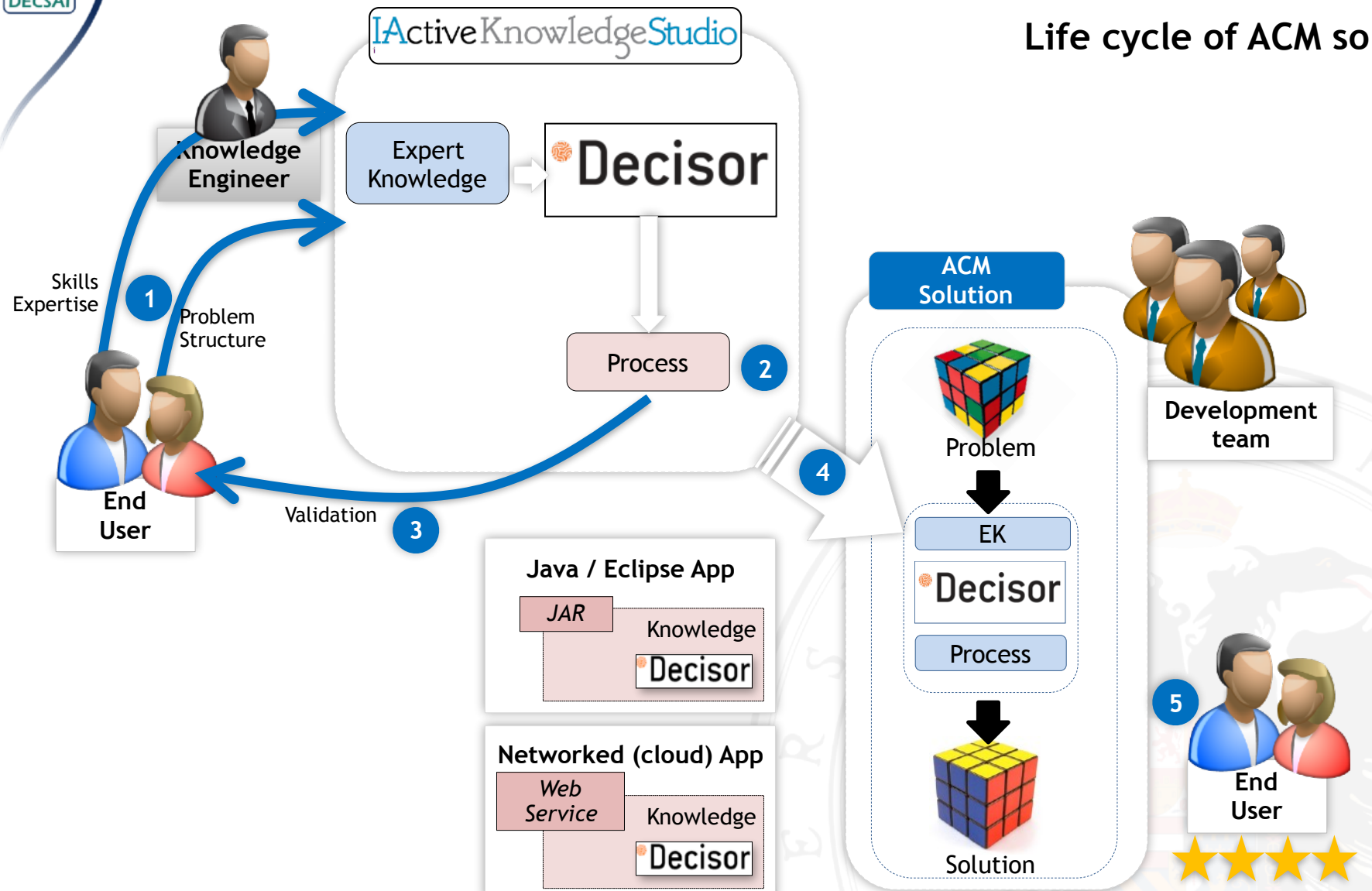
Departamento de Ciencias de la Computación e Inteligencia Artificial

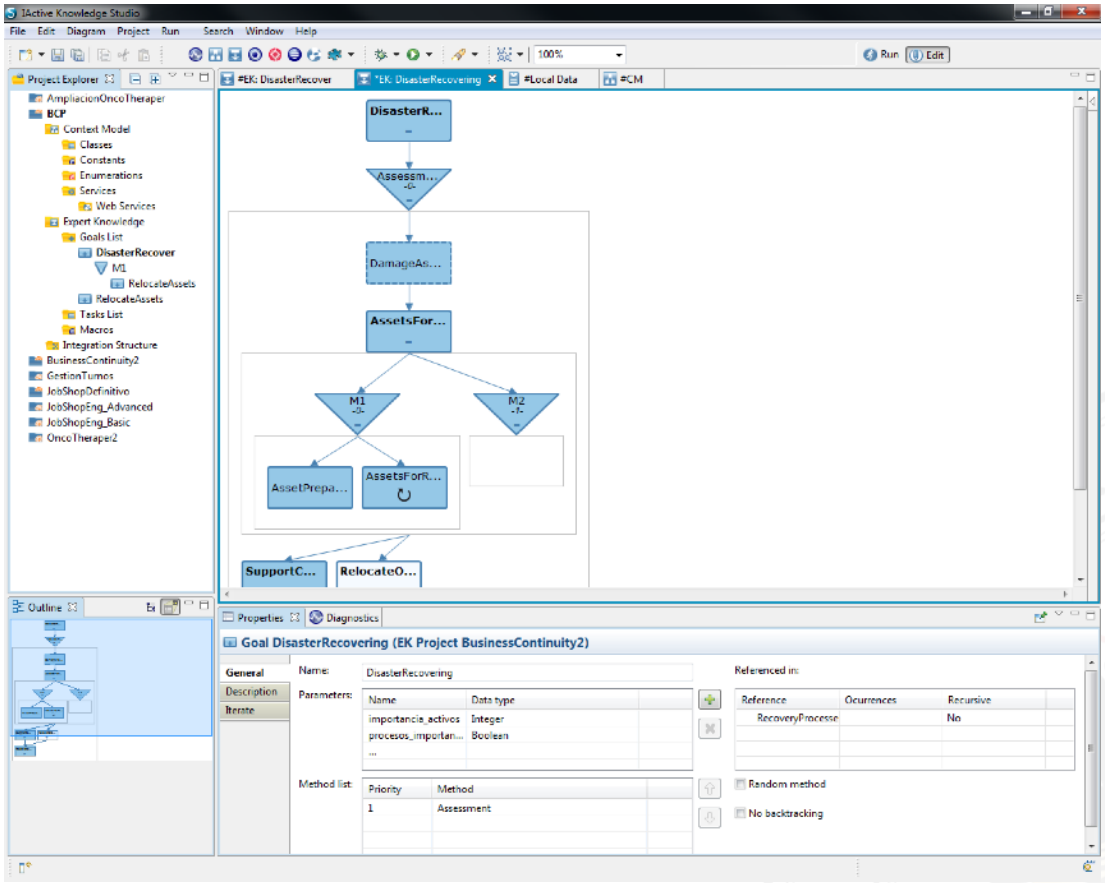
1. Introduction to practical Process Generation and Adaptive Case Management with Knowledge Studio




KNOWLEDGE
RULES
X → Y
PROCESS
FRAGMENTS
(3) Searches
IActive KnowledgeStudio
intelligent solutions
(1) Analyzes state of the problem
(4) Designs
(2) Analyzes the goal
THE
PROBLEM
(the case)
THE GOAL
Process
(5) Monitors

Life cycle of ACM solutions





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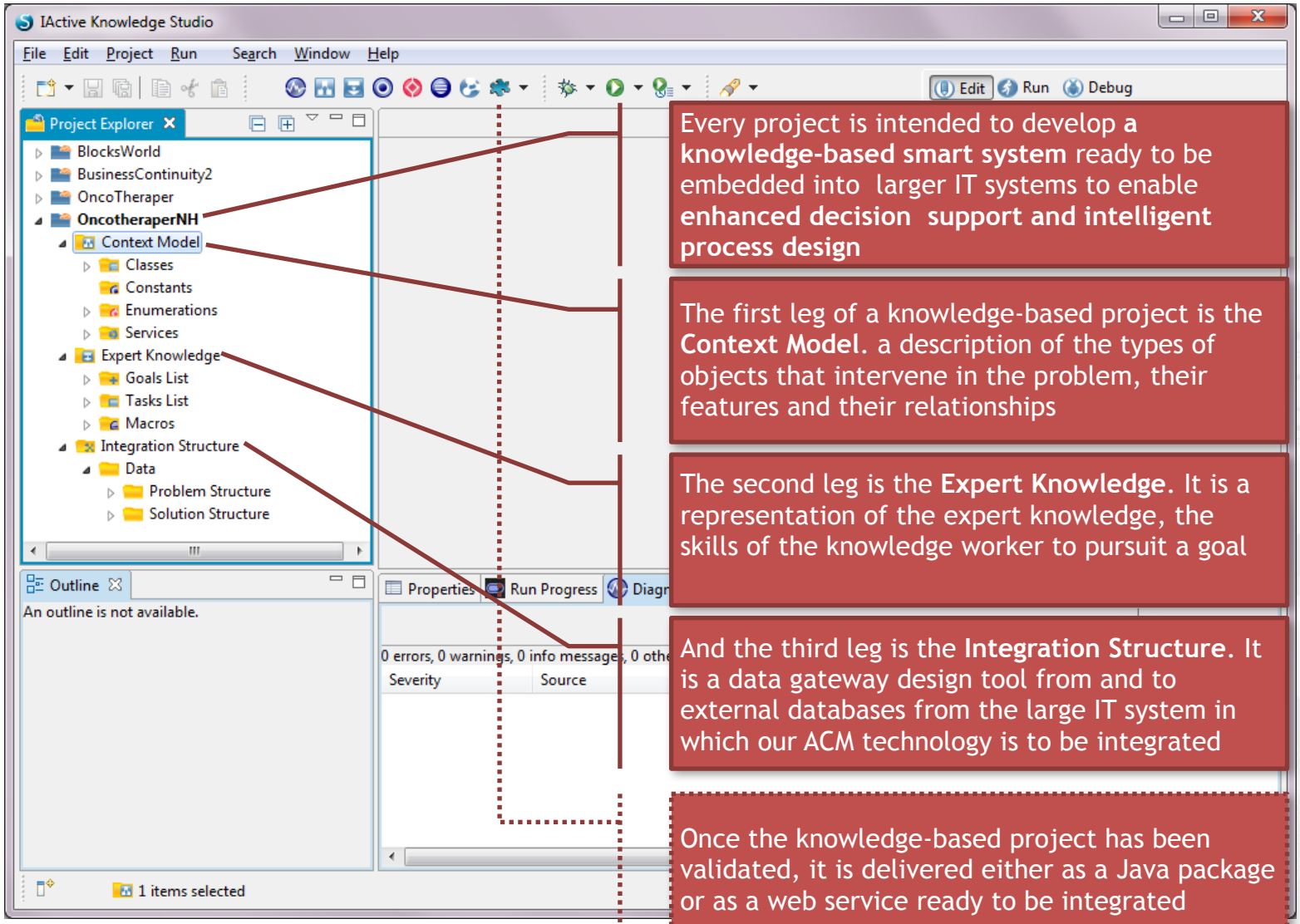
Gartner 2012 Cool Vendor



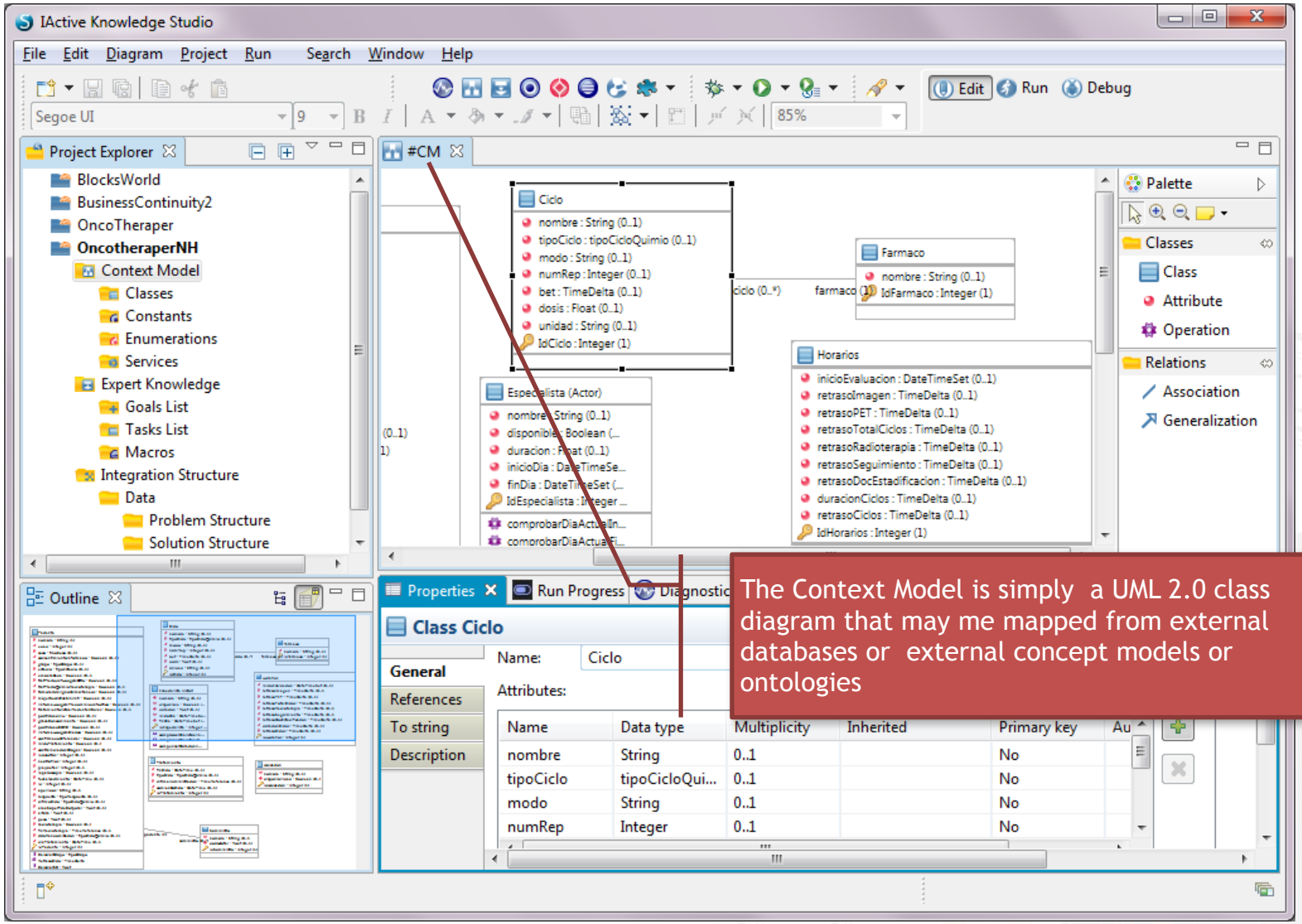
Every project is intended to develop **a knowledge-based smart system** ready to be embedded into larger IT systems to enable **enhanced decision support and intelligent process design**

The first leg of a knowledge-based project is the **Context Model**. a description of the types of objects that intervene in the problem, their features and their relationships

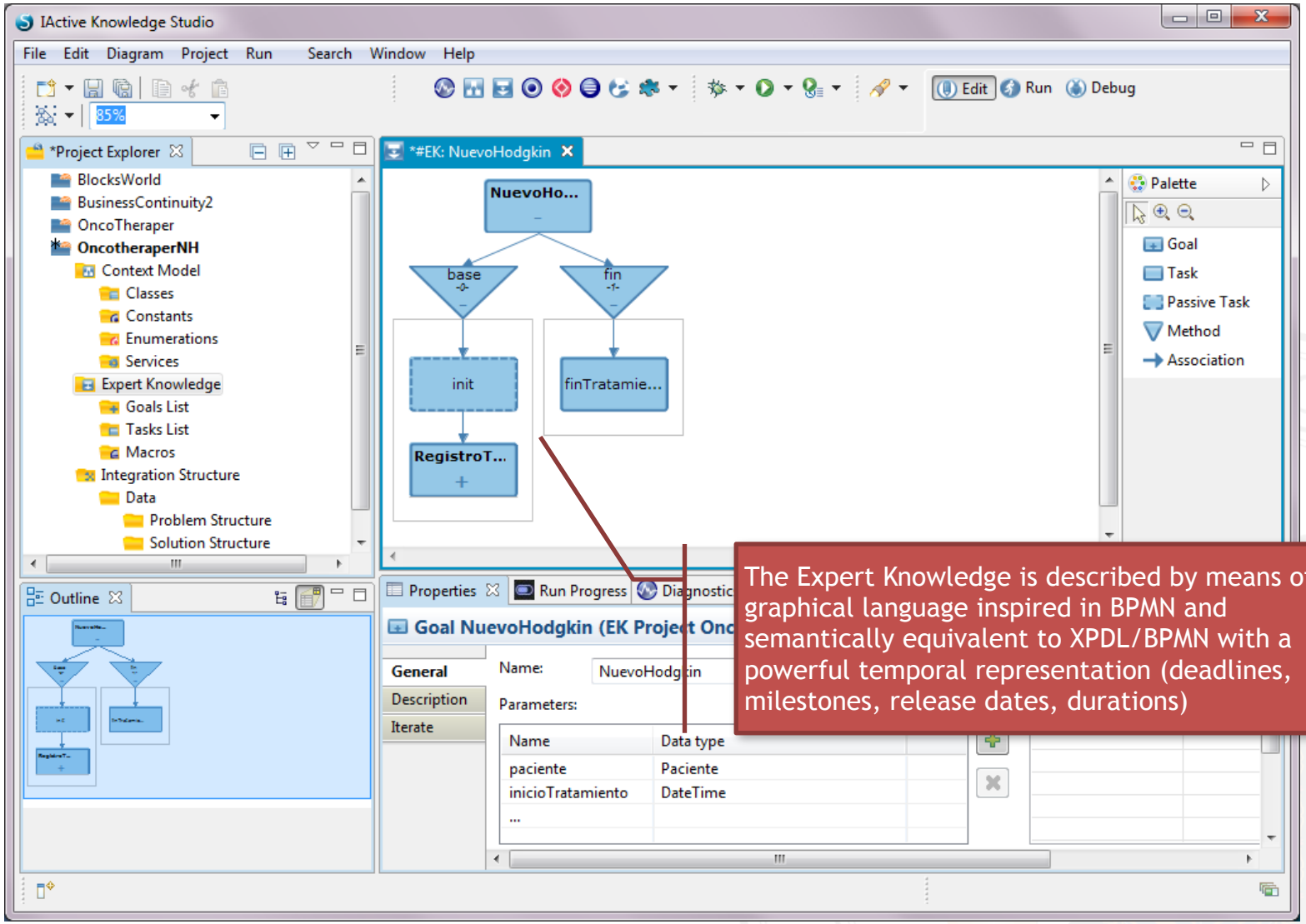
The second leg is the **Expert Knowledge**. It is a representation of the expert knowledge, the skills of the knowledge worker to pursuit a goal

And the third leg is the **Integration Structure**. It is a data gateway design tool from and to external databases from the large IT system in which our ACM technology is to be integrated

Once the knowledge-based project has been validated, it is delivered either as a Java package or as a web service ready to be integrated

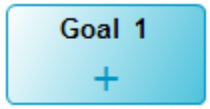


The Context Model is simply a UML 2.0 class diagram that may me mapped from external databases or external concept models or ontologies

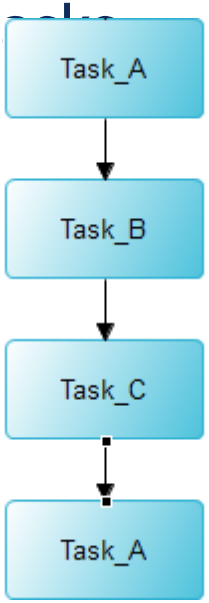


The Expert Knowledge is described by means of a graphical language inspired in BPMN and semantically equivalent to XPDL/BPMN with a powerful temporal representation (deadlines, milestones, release dates, durations)

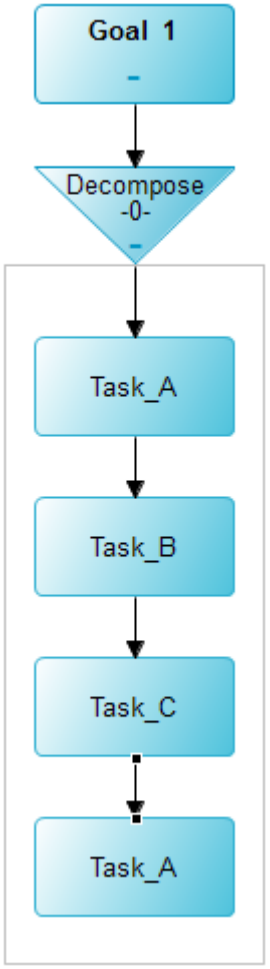
- Knowledge Studio formalism for representing processes is all about how to achieve a given goal



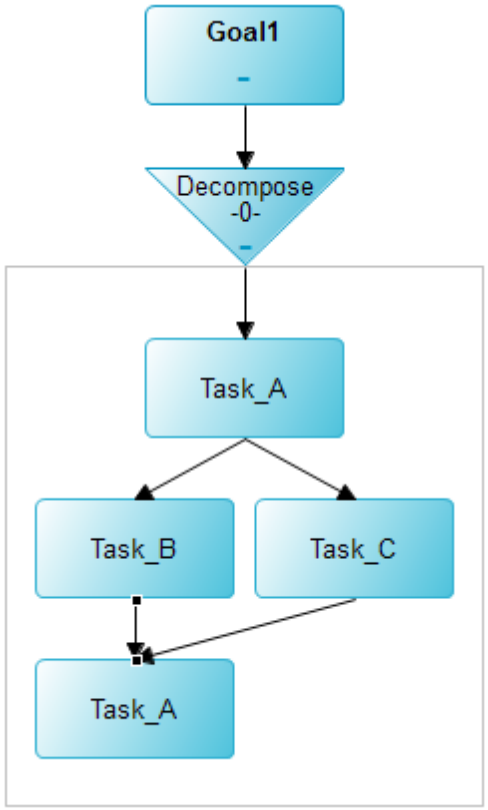
- Goals can be achieved by means of processes, i.e., sequences of t



- A goal can be decomposed into a subprocess that solves that goal

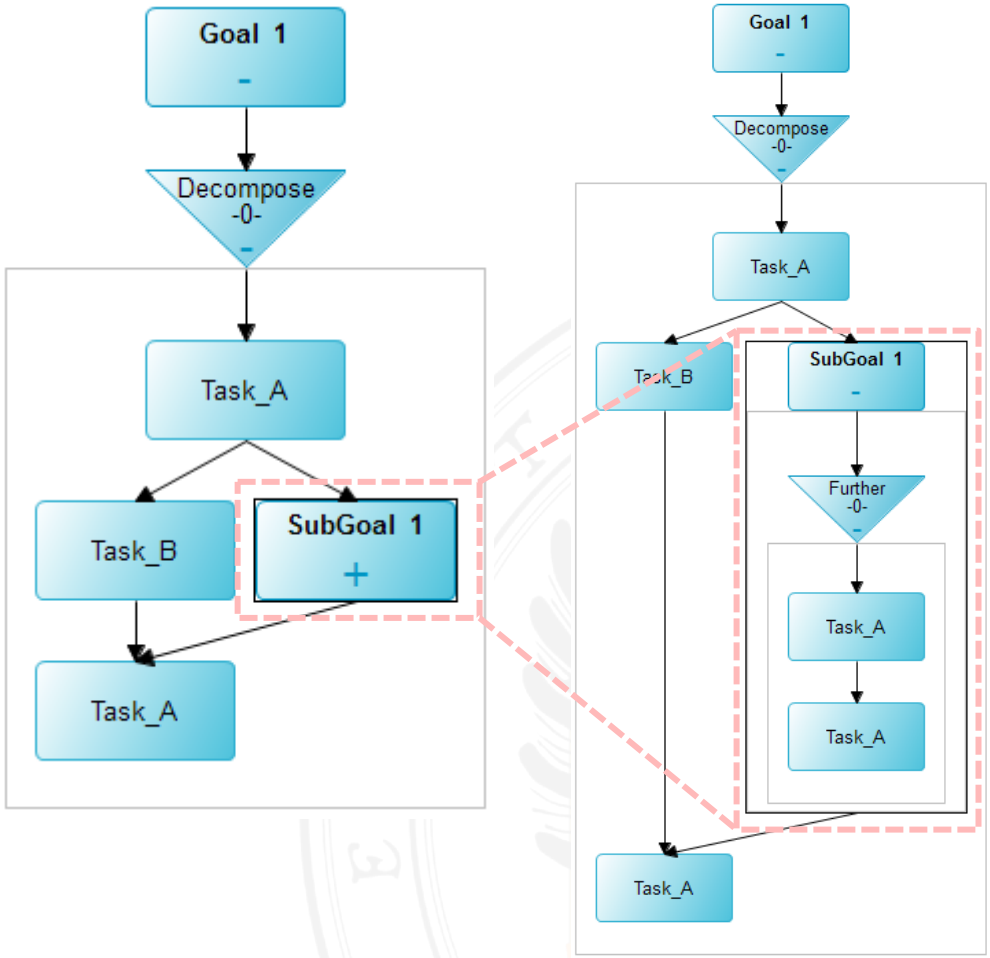


- Subrocesses may have parallel branches as well

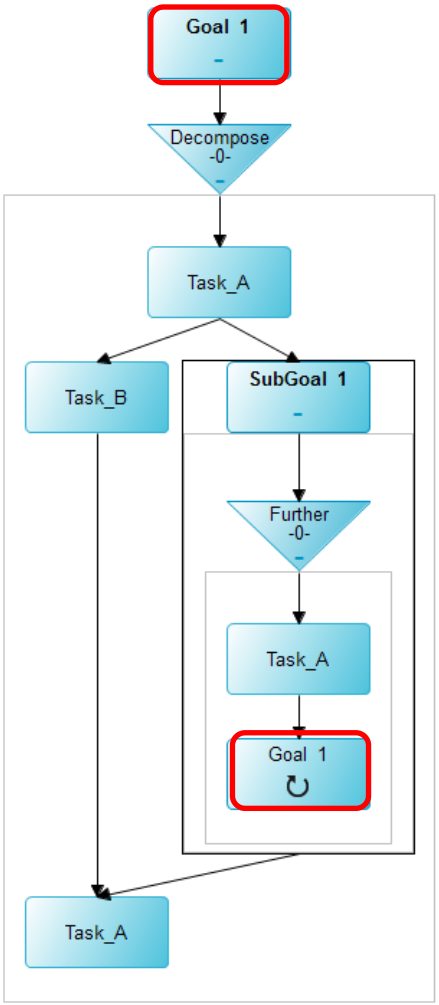


- With complex timing among them: "10 min before", "at the same time", "no later than", "exactly at"

- Subprocesses might be further decomposed

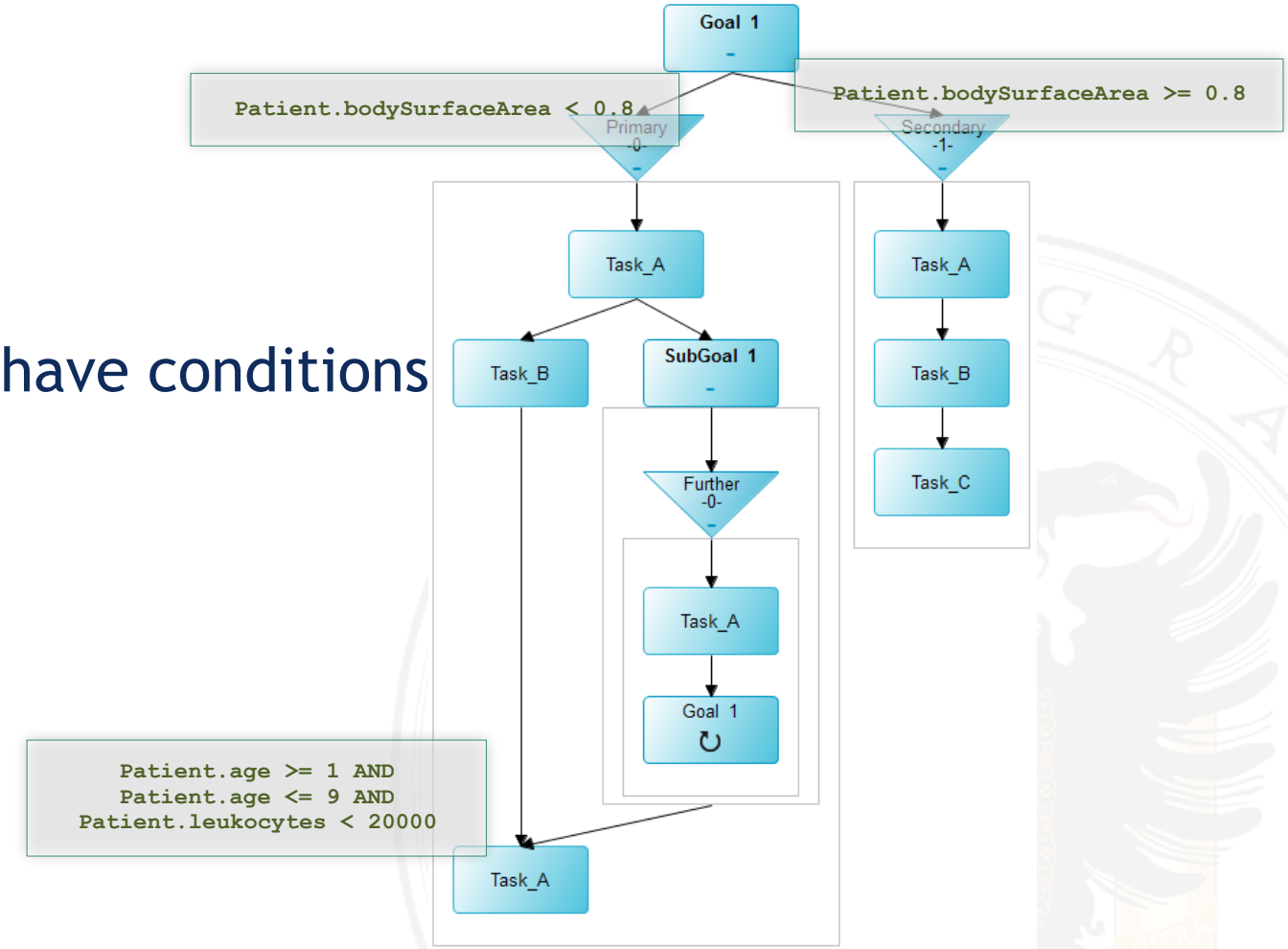


- Subprocesses might also be repeated

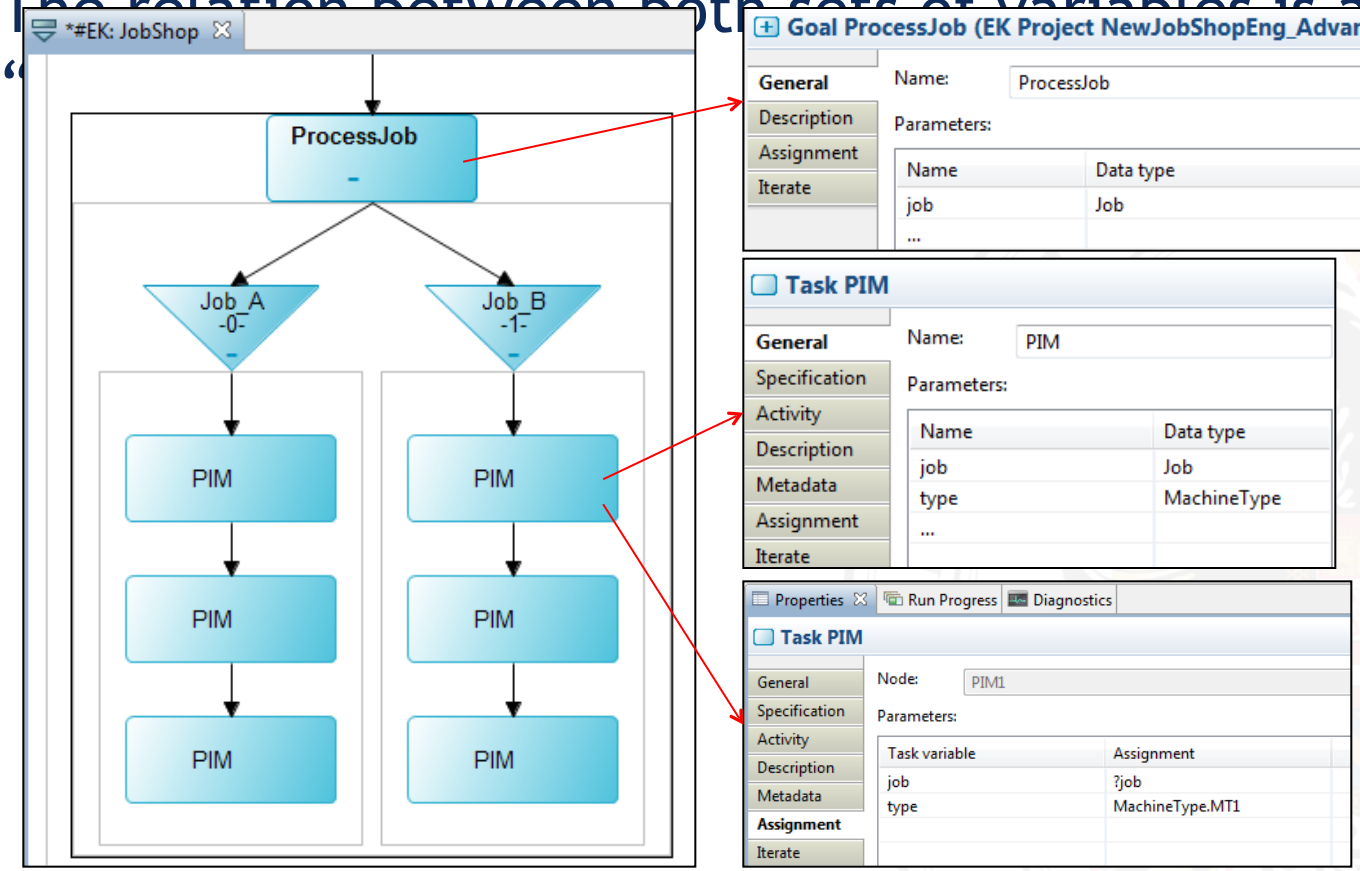


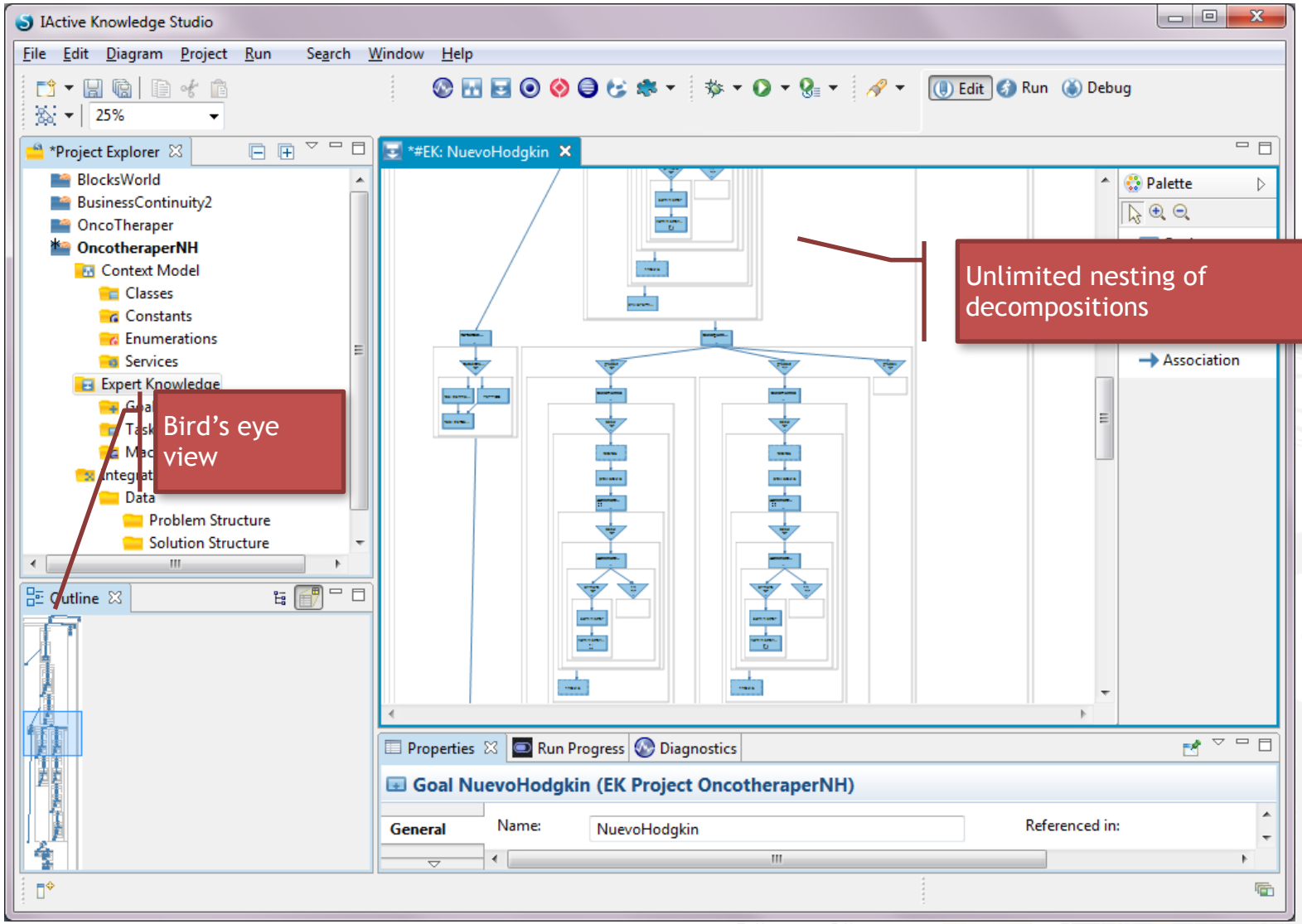
- A goal may have alternative decompositions guided by conditions

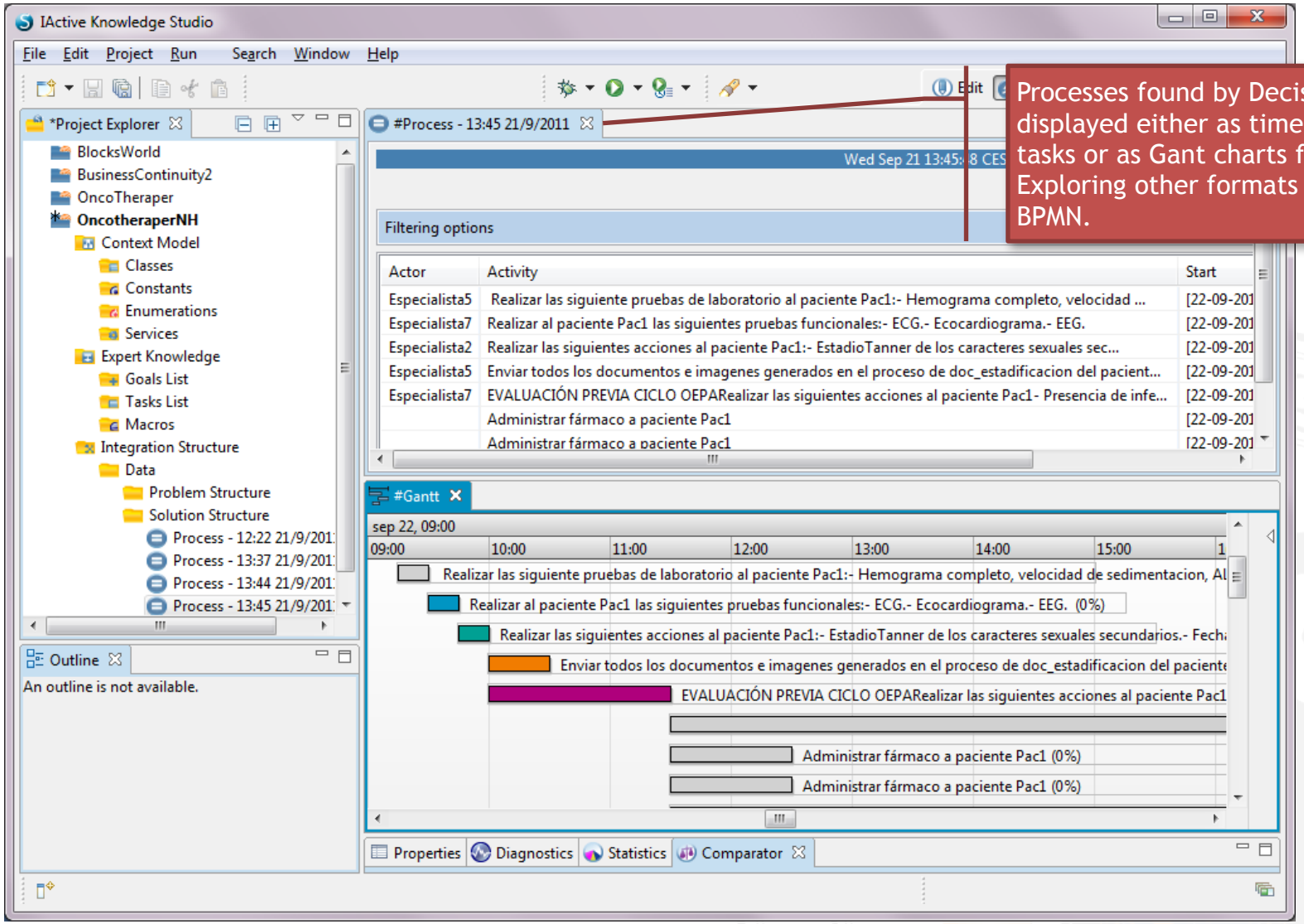
- Tasks may also have conditions



- Goals may have input parameters which could influence their achievement. And so do its constituent Tasks and SubGoals
- The relation between both sets of variables is an "



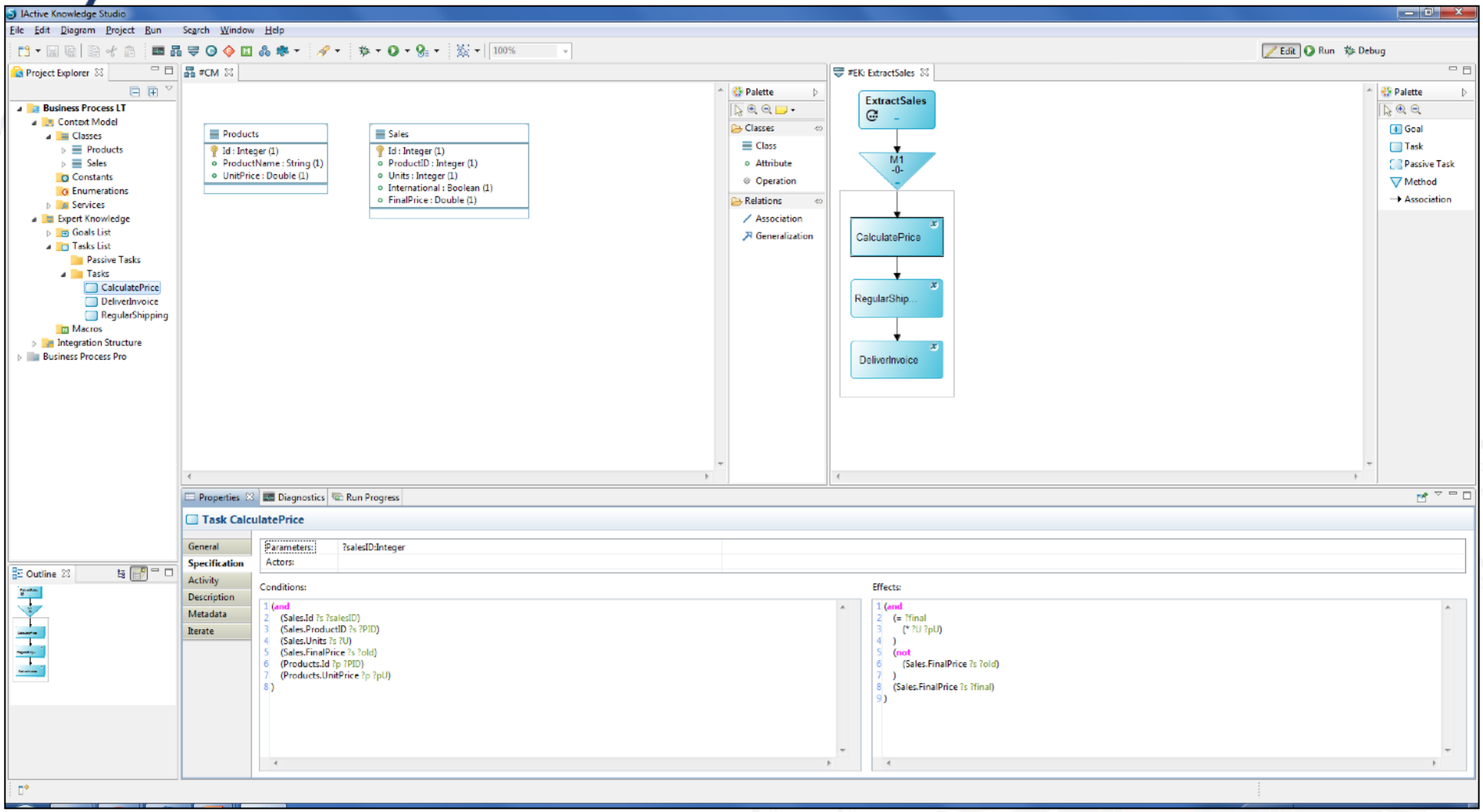

IActive Knowledge Studio
File Edit Diagram Project Run Search Window Help
Edit Run Debug
25%
*Project Explorer
BlocksWorld
BusinessContinuity2
OncoTherapeR
OncotheraperNH
Context Model
Classes
Constants
Enumerations
Services
Expert Knowledge
Data
Problem Structure
Solution Structure
Outline
*#EK: NuevoHodgkin
Palette
Association
Unlimited nesting of decompositions
Bird's eye view
Properties
Run Progress
Diagnostics
Goal NuevoHodgkin (EK Project OncotheraperNH)
General
Name:
NuevoHodgkin
Referenced in:



Processes found by Decisor may be displayed either as timed sequences of tasks or as Gant charts for validation. Exploring other formats like XPDL/ BPMN.

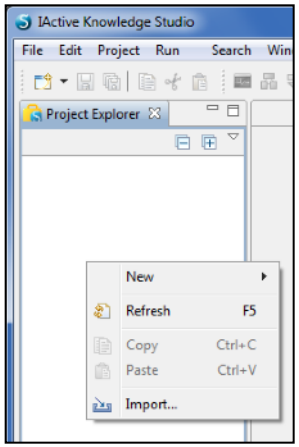
Dealing with a simple Business Process App

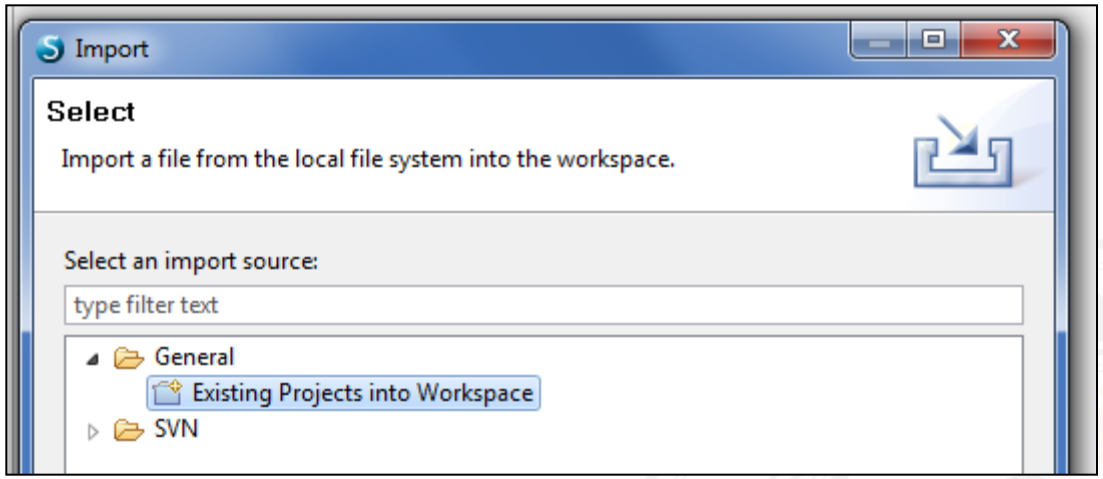
Practical Process Mining (II)

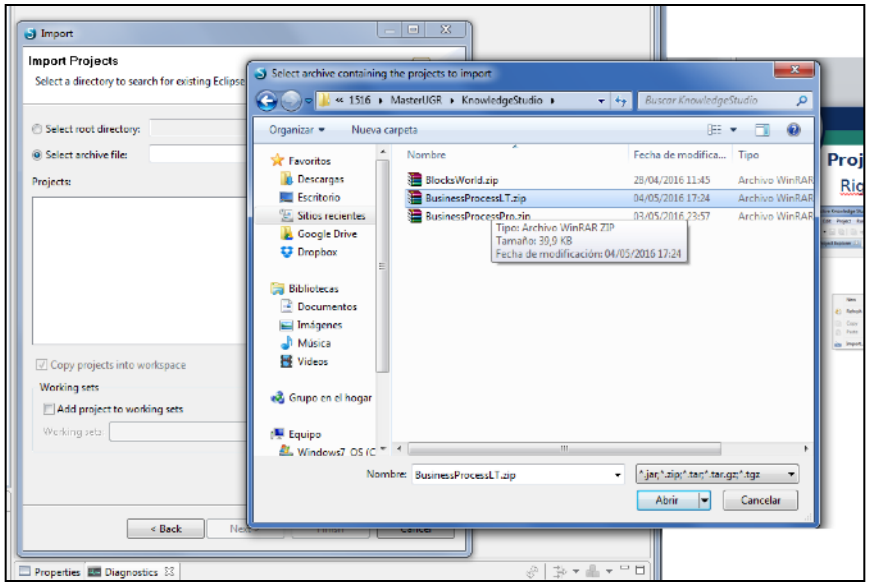


Project 1: Tiny Business Process

- Right click on “Project Explorer” > “Import” > “Existing Projects into Workspace” > “Select archive files” > “BusinessProcessLT.zip”

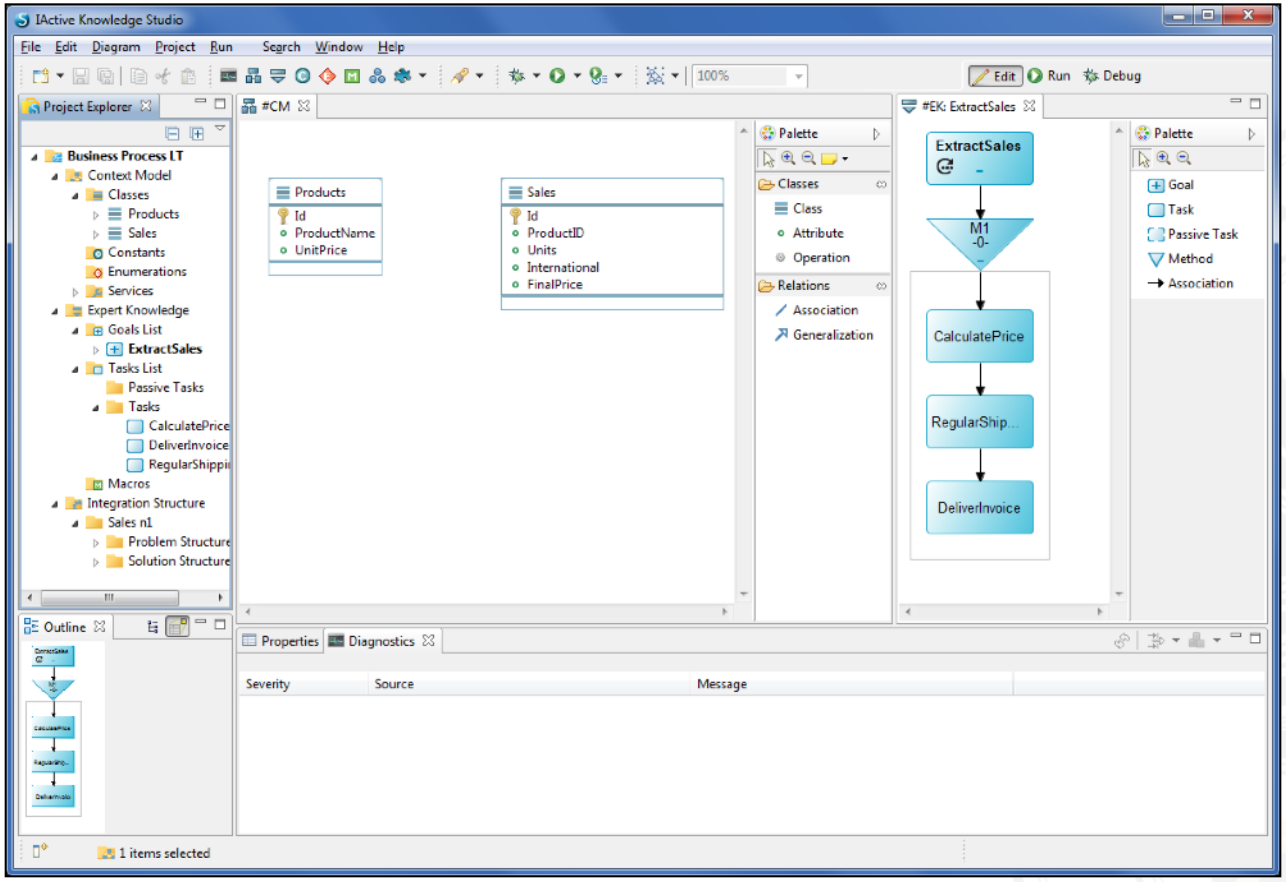


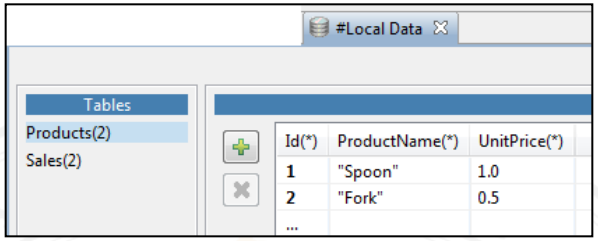


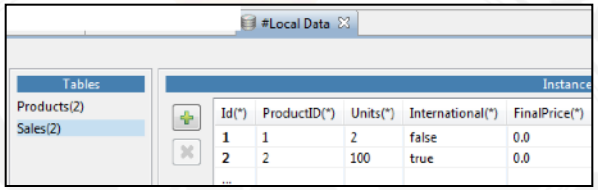


Project 1: Tiny Business Process

- Expand components “Context Model”
- Expand “Integration Structure” > “Sales n1” > “Problem Structure” > “Local Data”
- Expand “Expert knowledge”

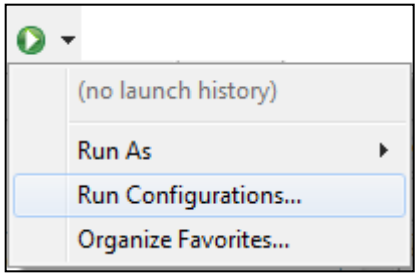


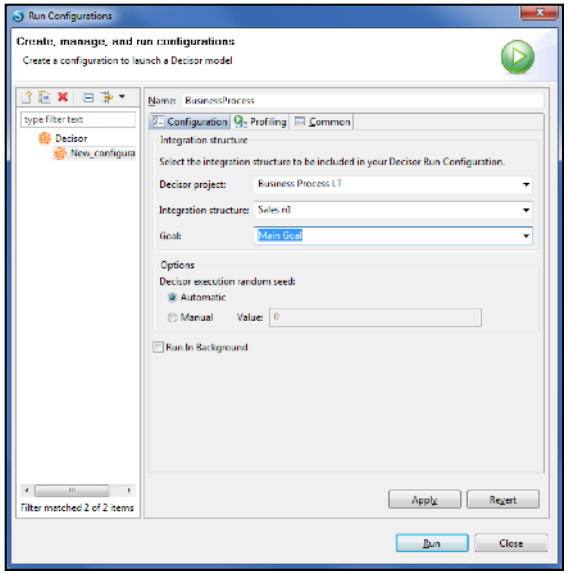


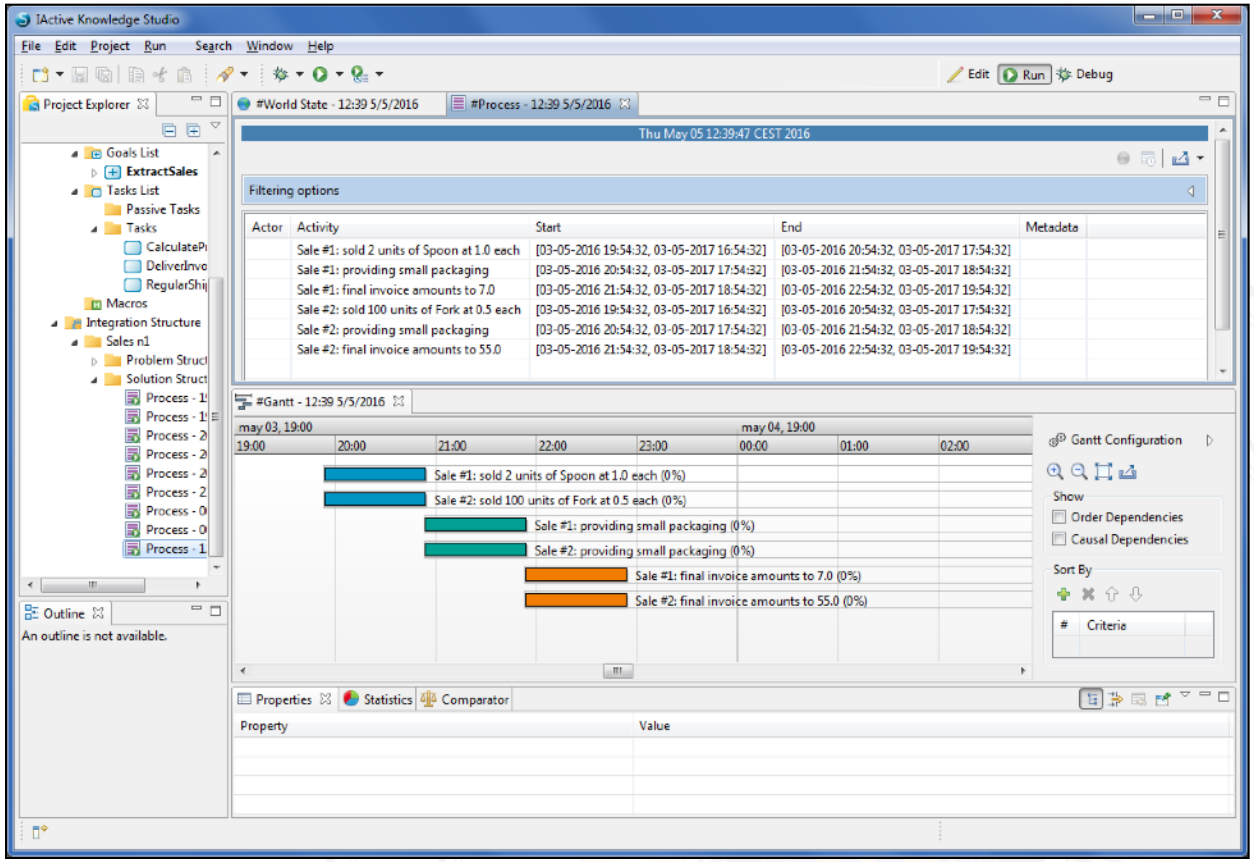


Project 1: Tiny Business Process

- Create a run environment > “Apply” > “Run”
- Both sales follow the same process and schedule





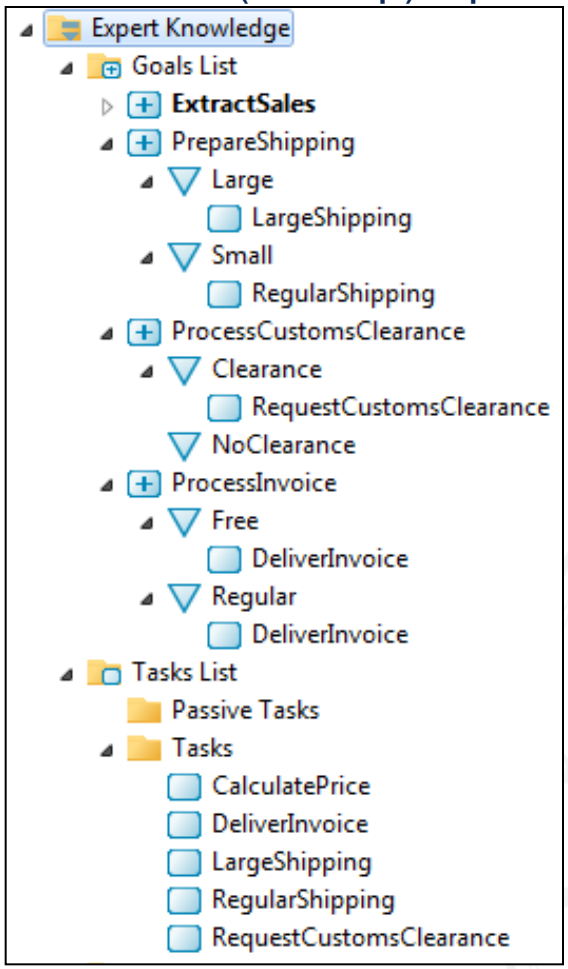


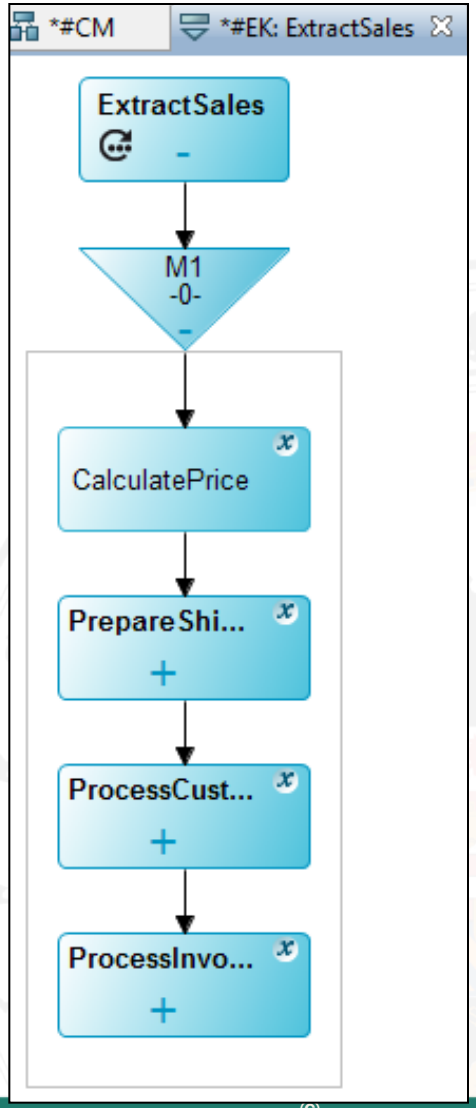
Project 2: Adaptive Business Process

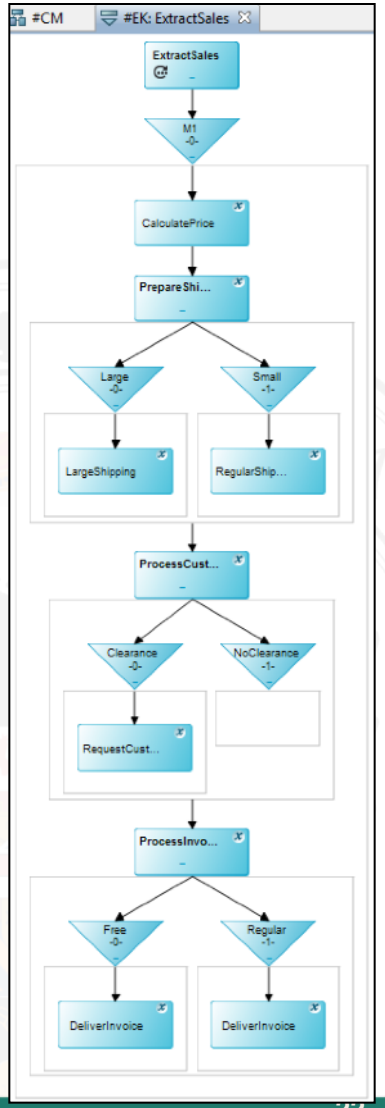
- "Project Explorer" > "Import" > "BusinessProcessPRO(incomp).zip"

1. **Create new Tasks**
   1. LargeShipping
   2. RequestCustomsClearance
2. **Create new Goals**
   1. PrepareShipping
   2. ProcessCustomsClearance
   3. ProcessInvoice
3. **Create two methods for each new Goal**
   1. PrepareShipping
      1. Large (>2 u.)
      2. Small (<= 2u.)
   2. ProcessCustomsClearance
      1. Clearance (when intl)
      2. NoClearance
   3. ProcessInvoice
      1. Free (> 20€)
      2. Regular (<= 20€ +5€ delivery)

ADAPT PROCESSES TO THE CONTEXT

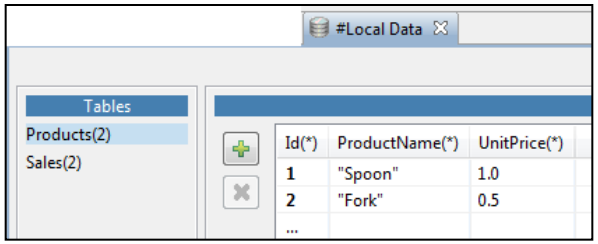


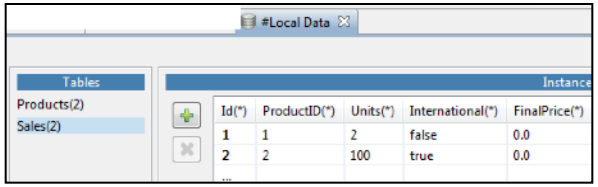


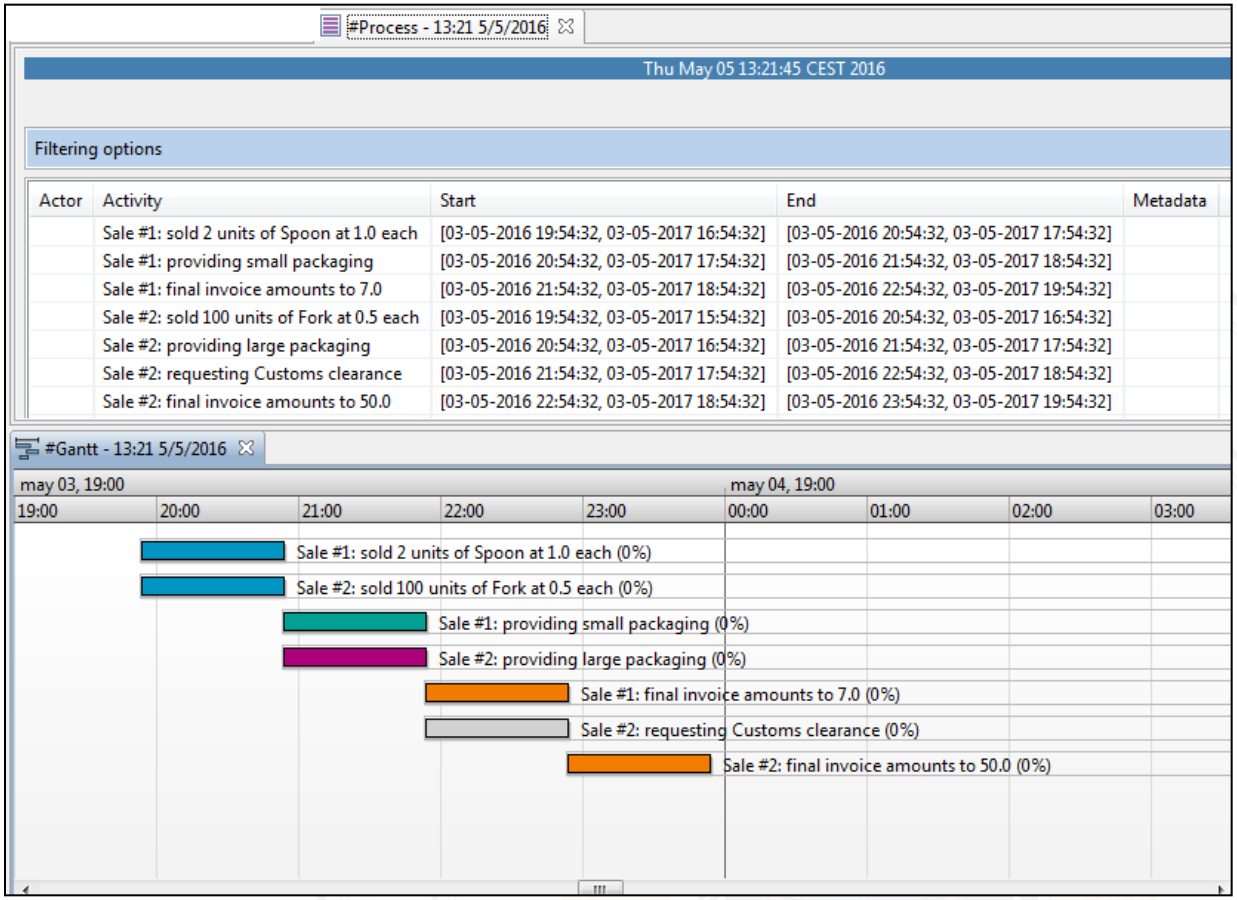


Project 2: Adaptive Business Process

- Redesign subprocesses to fit the goals of adaptive generation
- Create a new run environment
- Each sale follows a different process, schedule and final price







Project 2: Adaptive Business Process

- Export project as “BusinessProcessPro.zip”
- Take screenshots of both process and Gantt chart
- Send them to the teacher **< 15/JUN/2018**