

ECP Analysis Workflow Walkthrough

version 1.1

Introduction

The aim of this document is to walk you through the analysis workflow for the ECP example from the point of view of the OO analyst/designer. This example should be read in conjunction with our book, UML and the Unified Process [Arlow].

References

[Arlow] - UML and the Unified Process, Jim Arlow and Ila Neustadt, Addison Wesley, 2002, ISBN0201770601

[ECPI] - ECP Informal System Specification, Clear View Training, 2002

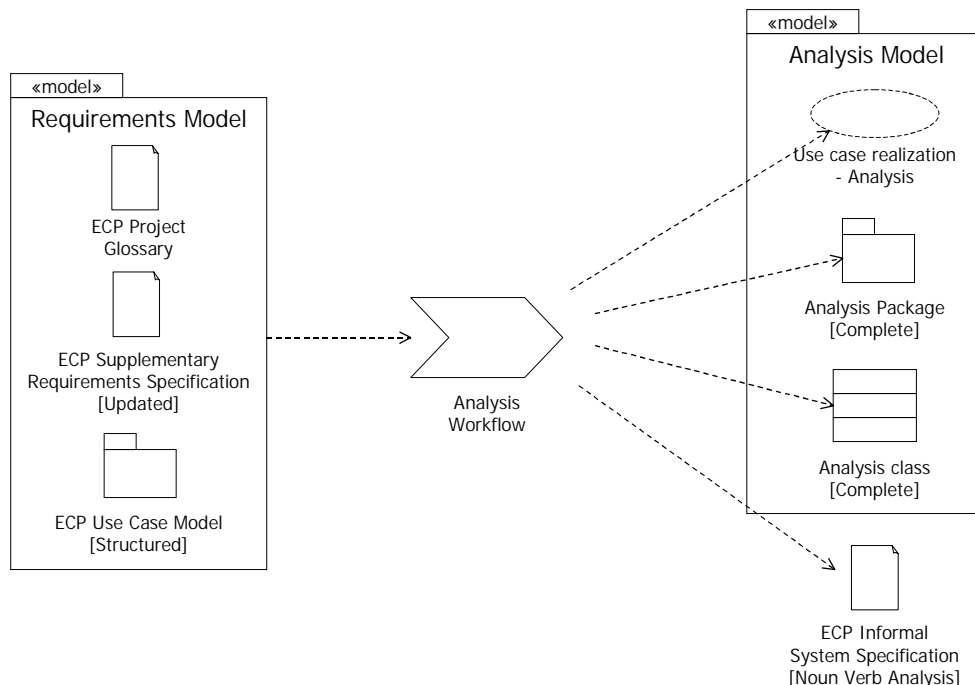
[ECPU] - ECP User Interface Prototype, Clear View Training, 2002

[ECPRequirements] - ECP Requirements Walkthrough, Clear View Training, 2002

Inputs and outputs

Here are the inputs and outputs to the UP Analysis Workflow for the ECP:

Figure 1



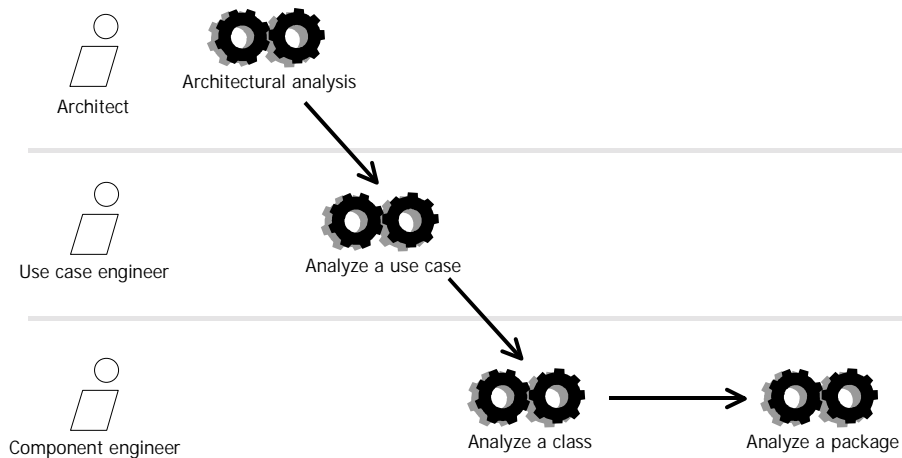
Scope

We will be performing the UP analysis workflow for the Clear View Training ECP. This analysis engineering activity is based on the information contained in the Requirements Model.

The Analysis Workflow

The UP Analysis Workflow is all about creating the Analysis Model.

Figure 2



The OO analyst/designer may be called upon to play all of the roles in this workflow.

Here is a summary of each of the activities in the Analysis workflow:

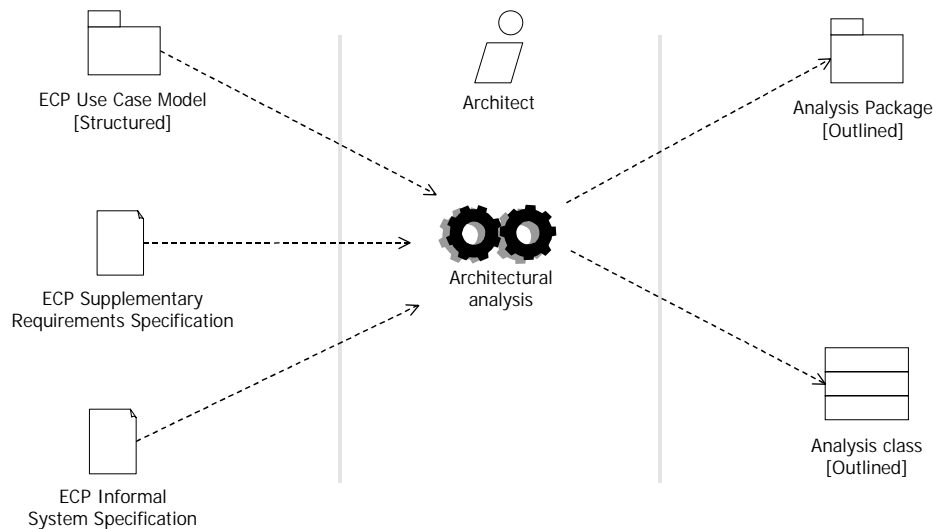
Table 1

Activity	Purpose
Architectural analysis	Outline the analysis model by specifying obvious packages, analysis classes and relationships.
Analyze a use case	Identify the analysis classes needed to perform the use case's flow of events.
Analyze a class	Identify the responsibilities, attributes and relationships of an analysis class based on its role in the use case realizations.
Analyze a package	Package analysis classes to minimize coupling and maximize cohesion.

Activity: Architectural analysis

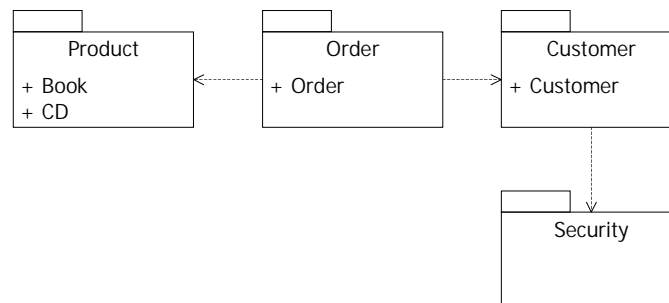
This activity is about creating an outlined static model consisting of *obvious* analysis packages, analysis classes and relationships:

Figure 2



Our first guess at an analysis model is shown below:

Figure 3



We have applied a standard Customer/Product/Order pattern to create a first-cut analysis model that will be appropriate to this sort of system.

Activity: Analyse a use case

This process is also known as use case realization. The idea is to find the analysis classes that interact together to realize the behavior specified in the use case flow of events. This is essentially a two step process:

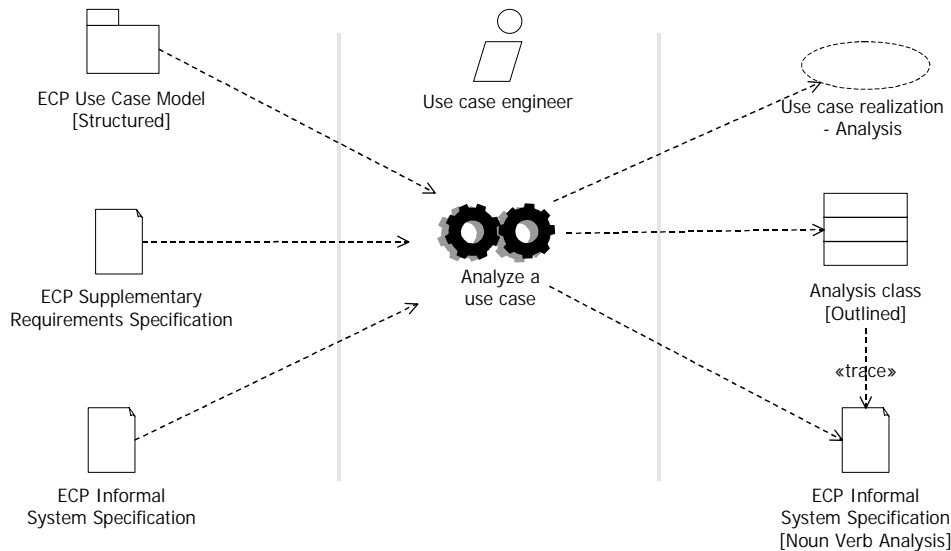
- Find candidate analysis classes
- Create an interaction diagram to show how these analysis classes realize the behavior of the use case.

Typically, we proceed as described in [Arlow] by first finding a set of candidate analysis classes. We do this by a combination of CRC card modeling and noun/verb analysis of use cases and any other relevant documents. For each use case we then construct interaction diagrams that show how objects of our analysis classes interact together to realize the behavior specified by the use case. This demonstrates that the analysis classes can support the required system behavior.

ior. As we perform use case realization, we add, delete and change analysis classes as appropriate.

The inputs and outputs to this activity applied in the ECP project are shown below:

Figure 4

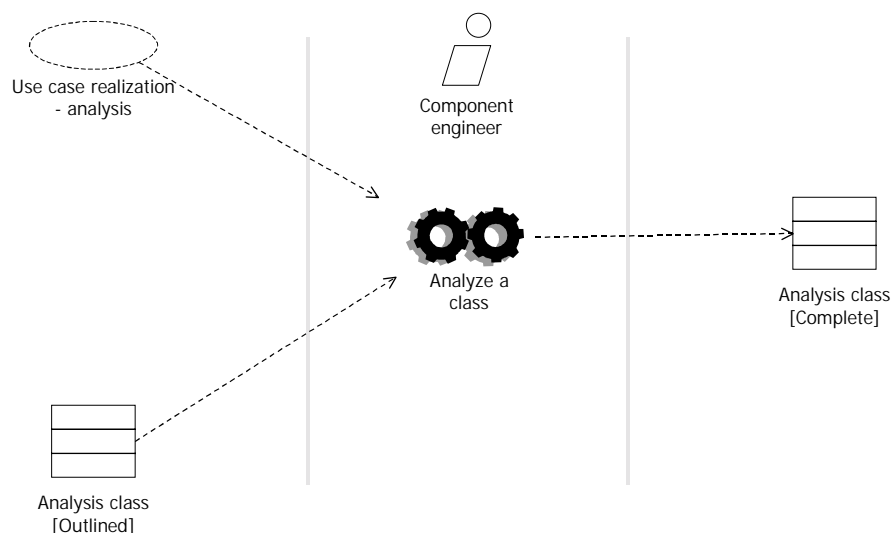


The output Use case realization - analysis consists of one or more interaction and class diagrams that together realize the use case behavior.

Activity: Analyze a class

This activity is generally performed in parallel to the activity Analyze a use case. As analysis classes are applied in use case realizations, their attributes, operations and relationships are updated. The inputs and outputs to this activity are shown below:

Figure 5



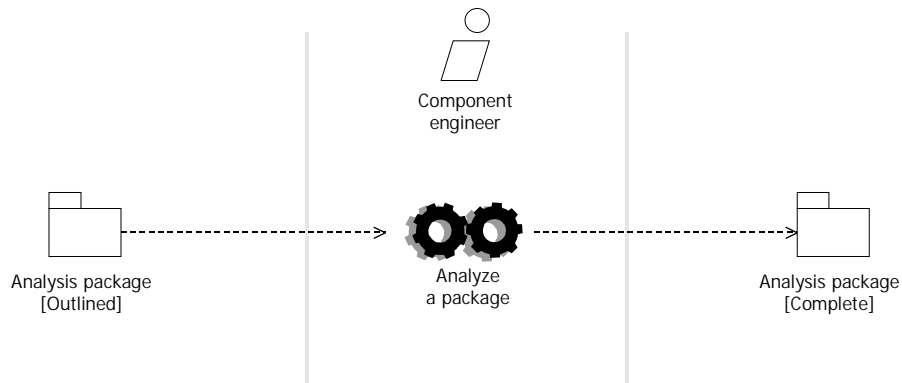
Activity: Analyze a package

Once we have created a plausible analysis model through the process of use case realization, we organize the analysis classes into analysis packages. We have two goals in this activity:

- Maximize the cohesion within each analysis package
- Minimize the coupling between packages

In the ECP project, the input and output to this activity is just analysis packages in various stages of completion. What the UP activity diagram does *not* show, is that analysis packages may be created or destroyed as the analysis activity progresses.

Figure 6

*Summary*

This concludes our brief walkthrough of the analysis workflow. The complete analysis model may be found on our website at www.clearviewtraining.com/example1/index.htm.