

paluno – The Ruhr Institute for Software Technology
University of Duisburg-Essen
Germany

Software Systems Engineering
Prof. Dr. Klaus Pohl

E-02: Context

Sample Solution

This Lecture Material was produced by

Prof. Dr. Klaus Pohl
Dr. Thorsten Weyer
Torsten Bandyszak
Philipp Bohn
Jennifer Brings
Johanna Buchner
Marian Daun
Felix Föcker
Andrea Salmon

Note: In particular, when creating diagrams based on textual descriptions, there are many other acceptable solutions – in addition to the solutions presented here.

Task 1: Identification of System Context Objects (Sample Solution)

The sample solution is only exemplarily provided and not complete, the students can find other system context objects.

System Context Object	Explanation
<u>Passenger</u>	The passenger is a user of the flight booking web portal, because he books his flight by using it.
<u>Web administrator</u>	The web administrator maintains the flight booking web portal after go live.
<u>Flight ticket</u>	A flight ticket is issued after the flight has been booked by use of the flight booking web portal. It is predefined by the respective airline.
<u>PayPal</u>	A passenger can pay his flight tickets by his PayPal account using the flight booking web portal.
<u>Hotel portal</u>	The hotel portal is recommended by the flight booking web portal.
Credit card	Flights, which are offered by the flight booking web portal, can be booked by credit card.
Airport	The desired departure and destination airports must be selected by the passengers on the flight booking web portal.
Airline	The airline the passenger wants to travel with must be selected on the flight booking web portal.
Airline employee (Check-In)	The airline employee checking in the passengers at the counter must have access to the passengers' data that is provided by the flight booking web portal.
Car rental portal	The car rental portal is recommended on the flight booking web portal.

Task 2: Matching the Objects and their Properties to the three System Context Facets (Sample Solution)

The sample solution is only exemplarily provided and not complete, the students can find other object properties.

Requirements Engineering Context			
System Context			Development Context
Subject Facet	Usage Facet	IT System Facet	
<u>Passenger</u> <ul style="list-style-type: none"> gender name birthday <u>Flight ticket</u> <ul style="list-style-type: none"> flight number price owner Credit card <ul style="list-style-type: none"> owner number limit Airport <ul style="list-style-type: none"> place airlines air personnel Airline <ul style="list-style-type: none"> name number of aircraft flight routes 	<u>Passenger</u> <ul style="list-style-type: none"> gender name birthday <u>Web administrator</u> <ul style="list-style-type: none"> name email address task Airline Employee (Check-In) <ul style="list-style-type: none"> name counter airline 	<u>PayPal</u> <ul style="list-style-type: none"> user email address bank account <u>Hotel portal</u> <ul style="list-style-type: none"> search function login function hotels Car rental portal <ul style="list-style-type: none"> car types number of cars prices 	

Part of the RE context	Context Object	Explanation
Subject Facet	<u>Passenger</u>	The gender, name, and date of birth of the passenger need to be stored by the flight booking web portal.
	<u>Flight ticket</u>	The number, price and passenger of the flight tickets need to be stored by the flight booking web portal.
	Credit card	The owner, number, and limit of a passenger's credit card need to be stored by the flight booking web portal.
	Airport	The place, airlines and air personnel of all airports need to be stored by the flight booking web portal.
	Airline	The name, number of aircrafts, and flight routes of the airline need to be stored by the flight booking web portal.

Part of the RE context	Context Object	Explanation
Usage Facet	<u>Passenger</u>	The passenger interacts with the flight booking web portal by using it in order to book his flight.
	<u>Web administrator</u>	The web administrator interacts with the flight booking web portal, since his task is to maintain the system.
	Airline Employee (Check-In)	The employee interacts with the web portal by checking the passengers' data stored by it.
IT System Facet	<u>PayPal</u>	A PayPal account is part of another system interacting technically with the flight booking web portal.
	<u>Hotel portal</u>	The hotel portal is another system interacting technically with the flight booking web portal.
	Car rental portal	A car rental portal is another system interacting technically with the flight booking web portal.

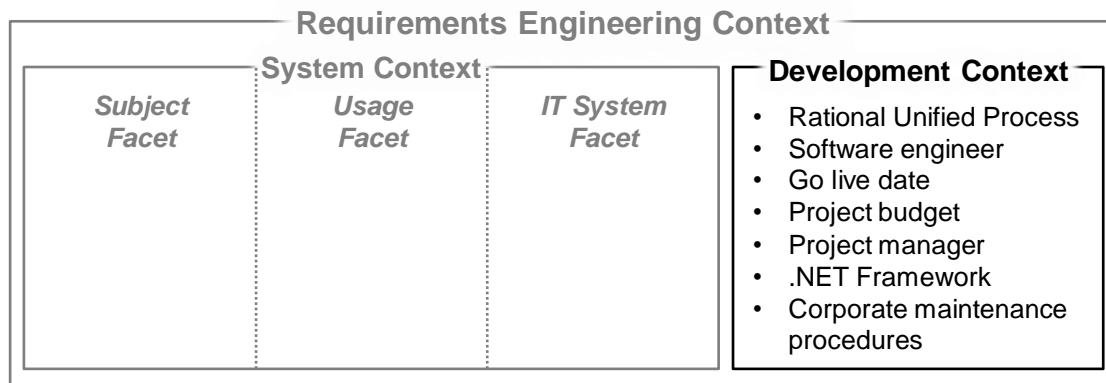
Task 3: Identification of Requirements Sources within the System Context (Sample Solution)

The sample solution is only exemplarily provided and not complete, the students can find other sources.

Object	Sources (Type)	Explanation
<u>Passenger</u>	Passport (Document)	On the passport the passenger's gender, name, and birthday is noticed.
<u>Flight ticket</u>	Airline (System)	The airline issues the flight tickets and therefore, it knows how expensive they are.
<u>Web administrator</u>	Administration procedures (Document)	The administration procedures store information about the web administrator.
<u>PayPal</u>	Business help desk (System)	The business help desk of PayPal can inform you about the PayPal system.
<u>Hotel portal</u>	Website administrator (Stakeholder)	The administrator of the hotel web portal maintains the website, so he knows its functions.
Credit card	Issuing bank (Stakeholder)	The bank has information about the credit cards of their customers.
Airport	IATA Airport Profile (Document)	Information about an airport is provided by IATA by usage of a corresponding IATA reference sheet
Airline	IATA Airline Profile (Document)	Information about an Airline is provided by IATA by usage of a corresponding IATA reference sheet
Airline Employee	Business Analyst from the Airline (Stakeholder)	A business analyst of the airline is able to provide detailed information about airline employees.
Car rental portal	Technical help desk (Stakeholder)	The technical help desk is able to provide detailed information about the car rental portal.

Task 4: Identification of Objects and Sources within the Development Context (Sample Solution)

The sample solution is only exemplarily provided and not complete, the students can find other objects and sources within the development context.



Development Context Object	Sources	Explanation
Rational Unified Process	Books	The Rational Unified Process is the development standard, which is used to develop the flight booking system. A guide how to apply it can be found in several books.
Software engineer	Corporate wiki	A software engineer is a specialist in the discipline and is able to give inside information about realistic solutions. On the company's website there can be found some information about her.
Go live date	Project plan	The date of deployment must be set at the beginning of the development. It can be found in the project plan.
Project budget	Project plan	The project budget must be set at the beginning of the development. It can be found in the project plan.
Project manager	Corporate wiki	A project manager is setting the process and milestones, which have to be completed during the development. On the company's website there can be found some information about her.
.NET Framework	.NET online documentation	.NET is the framework for developing and executing the flight booking portal. Information about this framework can be found in .NET online documentations.
Corporate maintenance procedure	Corporate wiki	The maintenance procedure after go live must be specified. It can be found in the project plan.