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| *CometPark* |
| **System Architecture Document** |
| **SE 6387 Advanced Software Engineering Project**  **R.Z. Wenkstern**    ***03/25/2014*** |

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# 

# Revision History

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| --- | --- | --- | --- |
| **Version** | **Date** | **Decription** | **Authors** |
| 1.0 | 03/06/2014 | Completed initial draft | Arunkumar, Hariprasad Prasanna, Rekha |
| 2.0 | 03/09/2014 | Updated Sequence and Architecture diagram | Arunkumar, Hariprasad Prasanna, Rekha |
| 3.0 | 03/18/2014 | Added Executable State charts | Arunkumar, Hariprasad Prasanna, Rekha |
| 4.0 | 03/25/2014 | Updated the State charts | Arunkumar, Hariprasad Prasanna, Rekha |

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# 1. Subsystems Sequence Diagrams

## 1.1 Update Parking Spot Status

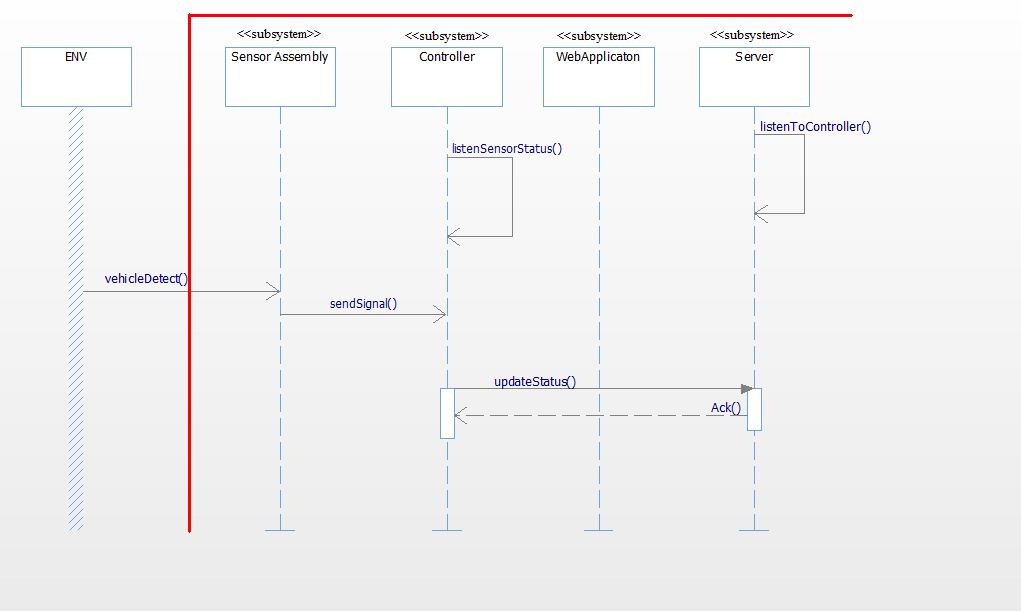


Figure 1 Update Parking Spot Status

## 1.2 Find Vacant Parking Spot

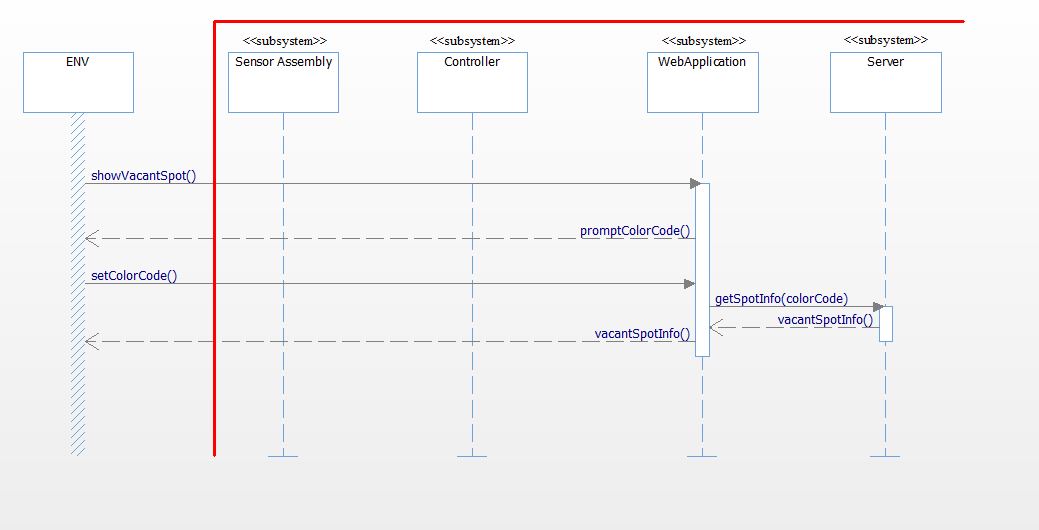


Figure 2 Find Vacant Parking Spot

## 1.3 Login

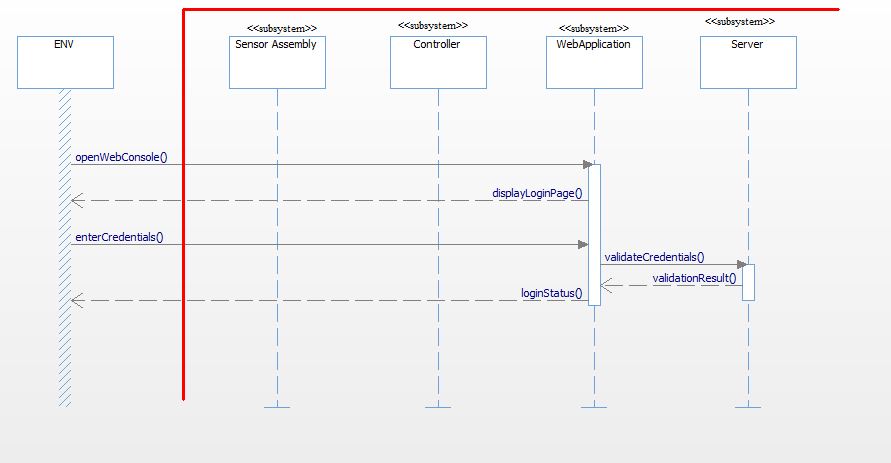


Figure 3 Login

## 1.4 Manage Parking Spot

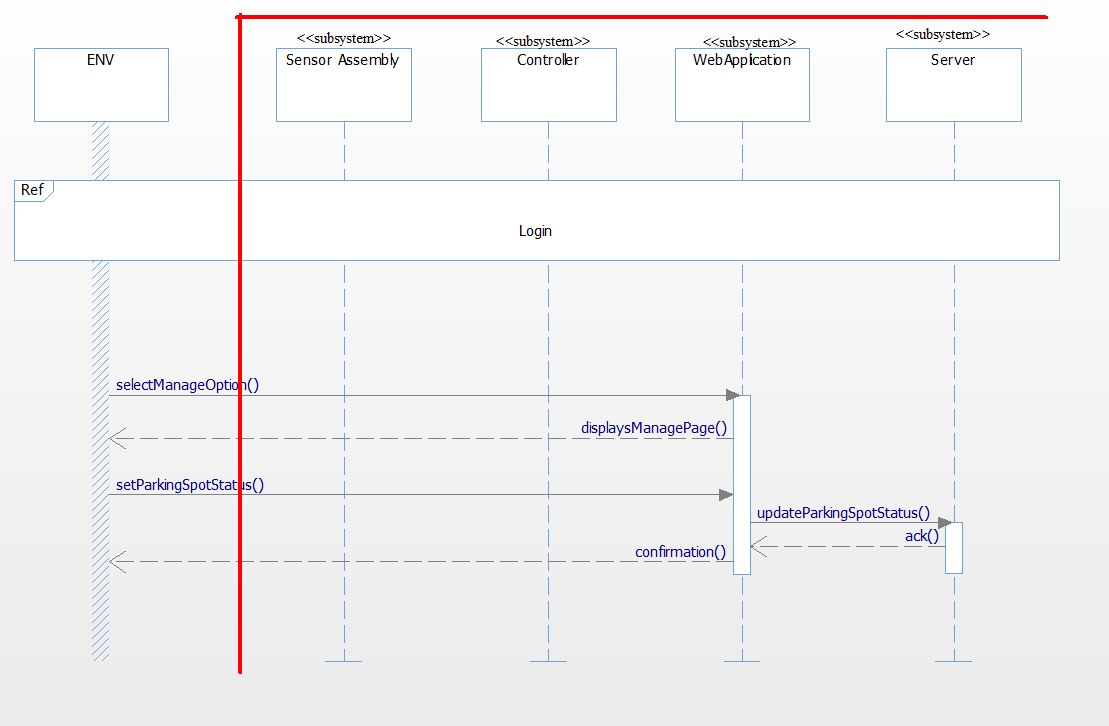


Figure 4 Manage Parking Spots

## 1.5 Update System Configuration

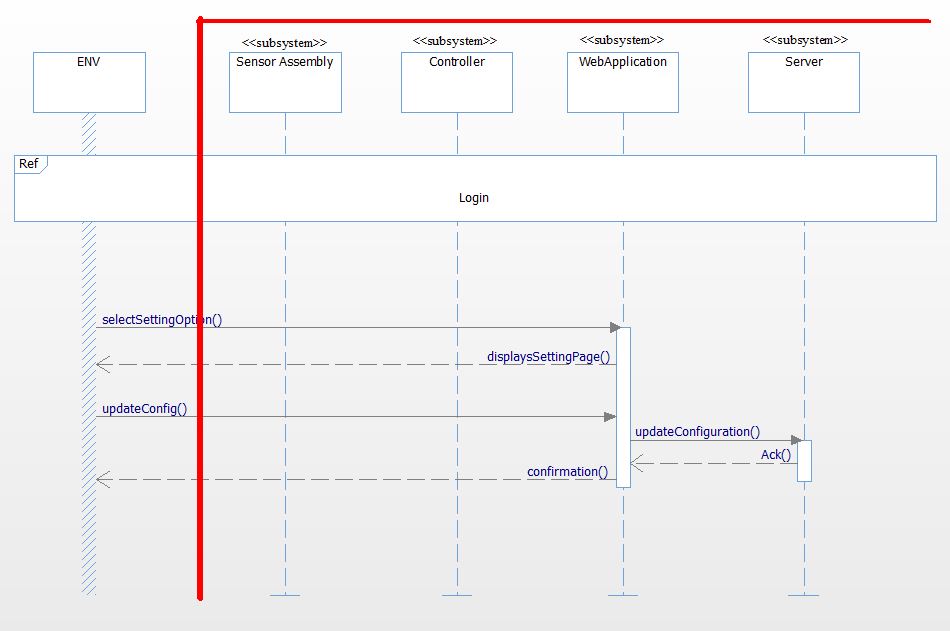


Figure 5 Update System Configuration

# 2. System Architecture with Operations

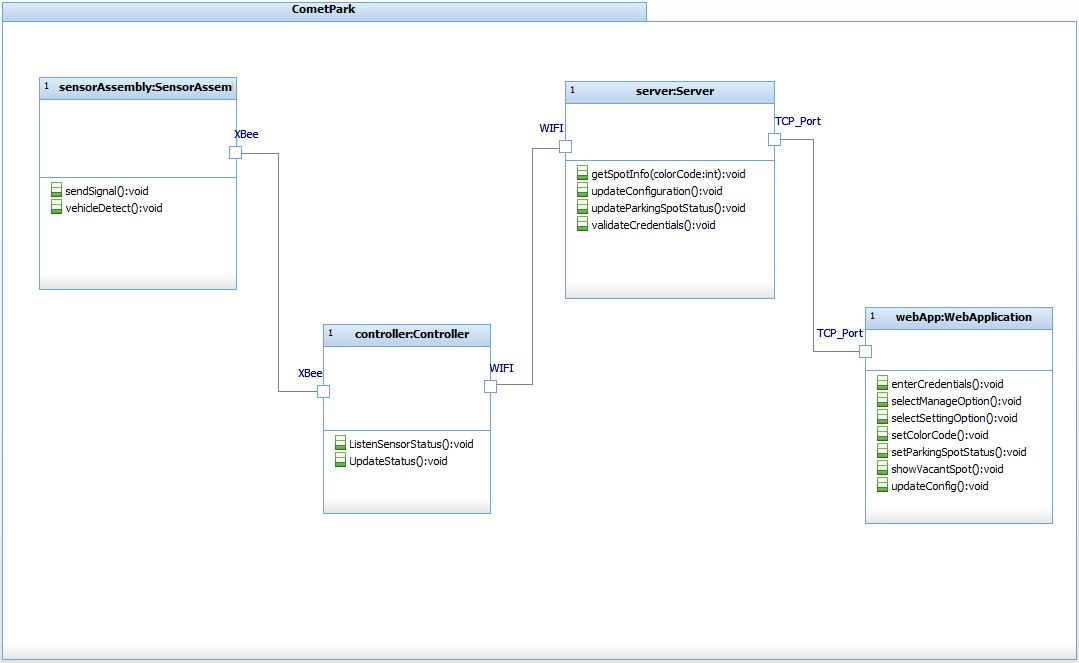


Figure 6 System Architecture

# 3. Statecharts

## 3.1 Statechart for the entire CometPark System

### 3.1.1 System State: OFF

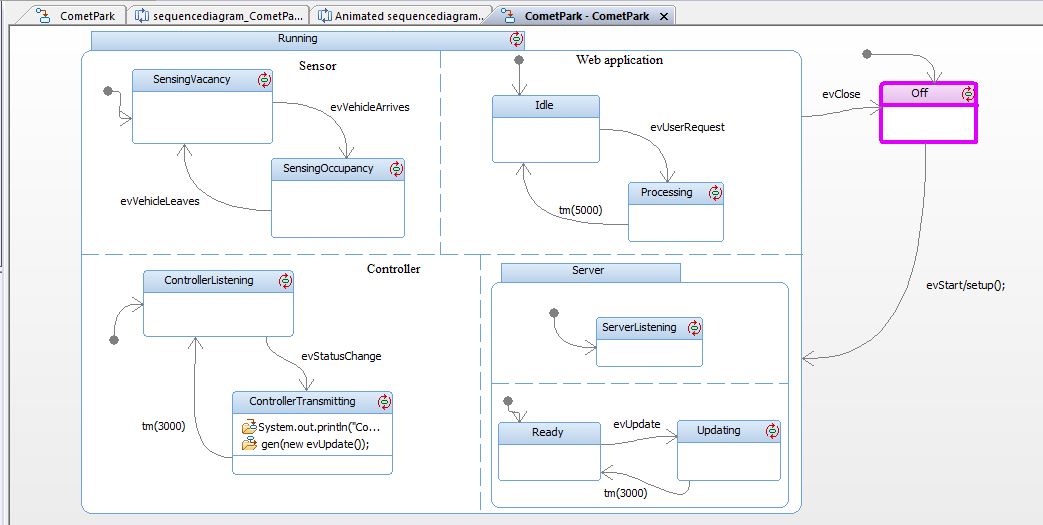


Figure System State: Off

### 3.1.2 System State: Running

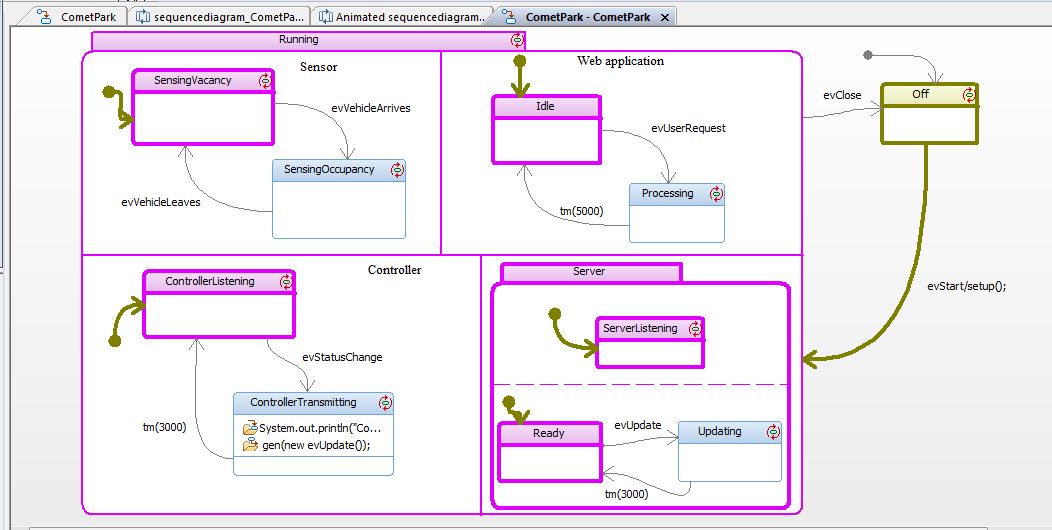


Figure System State: Running

### 3.1.3 System State: Vehicle Arrives

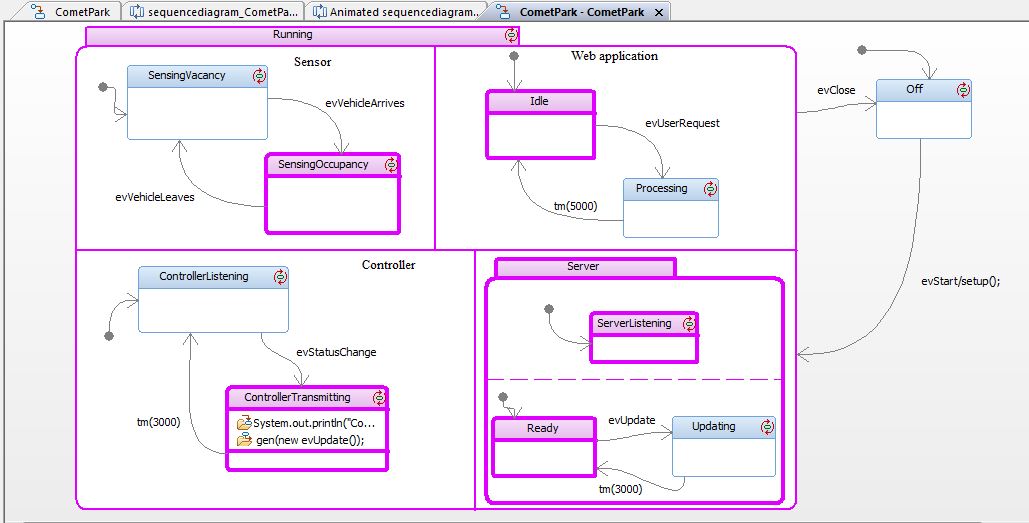


Figure Vehicle Arrives-Controller Transmitting

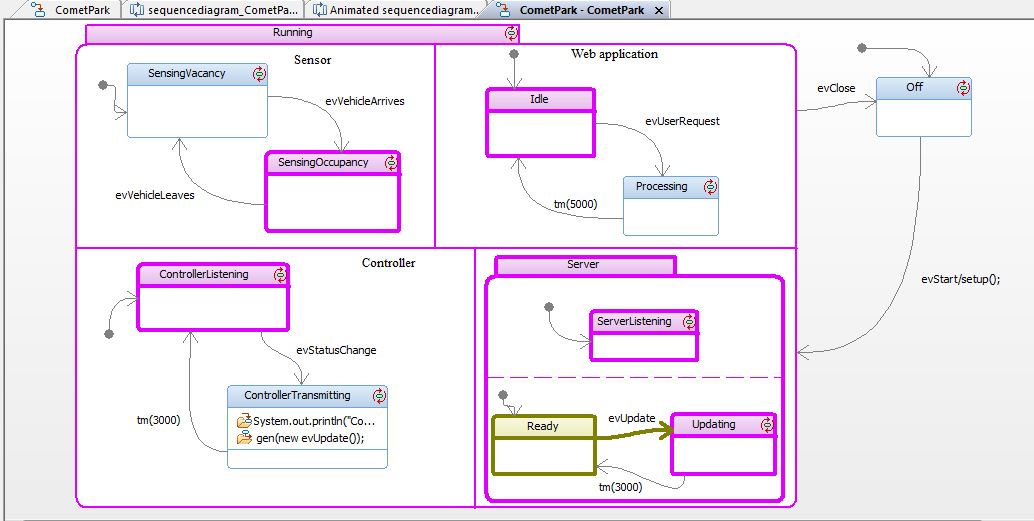


Figure Vehicle Arrives-Server Updating

### 3.1.4 System State: Vehicle Leaves

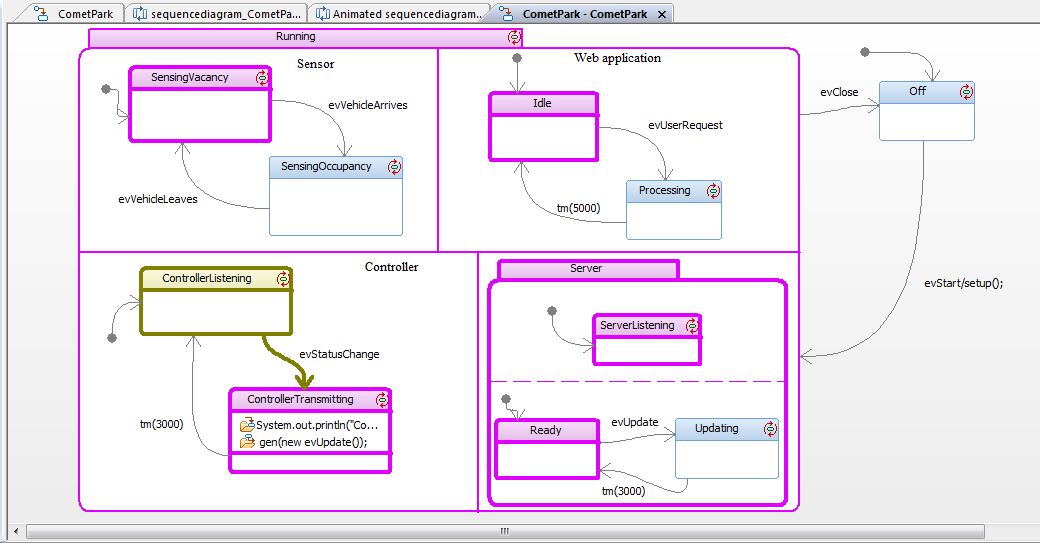


Figure Vehicle Leaves-Controller Transmitting

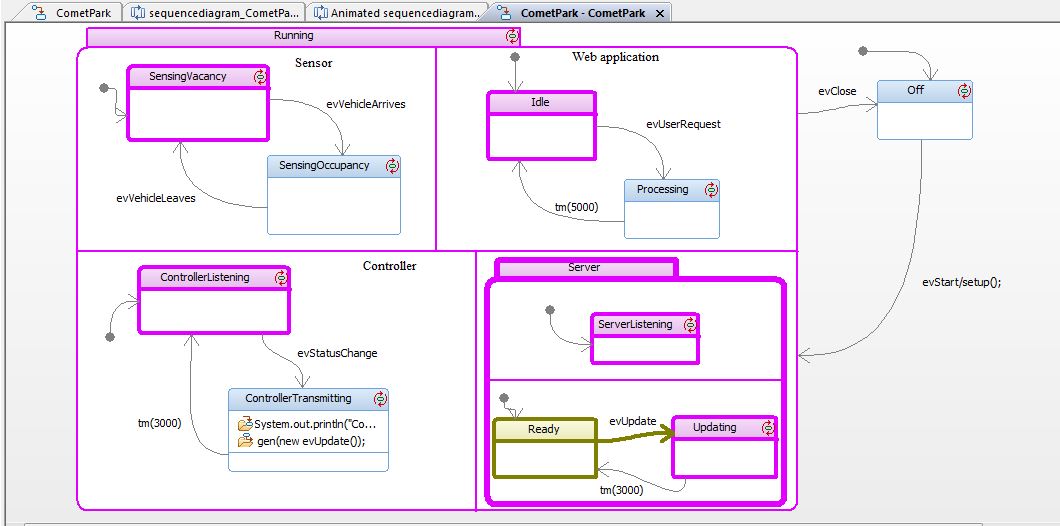


Figure Vehicle Leaves-Server Updating

### 3.1.5 System State: Web Application Receives a User Request

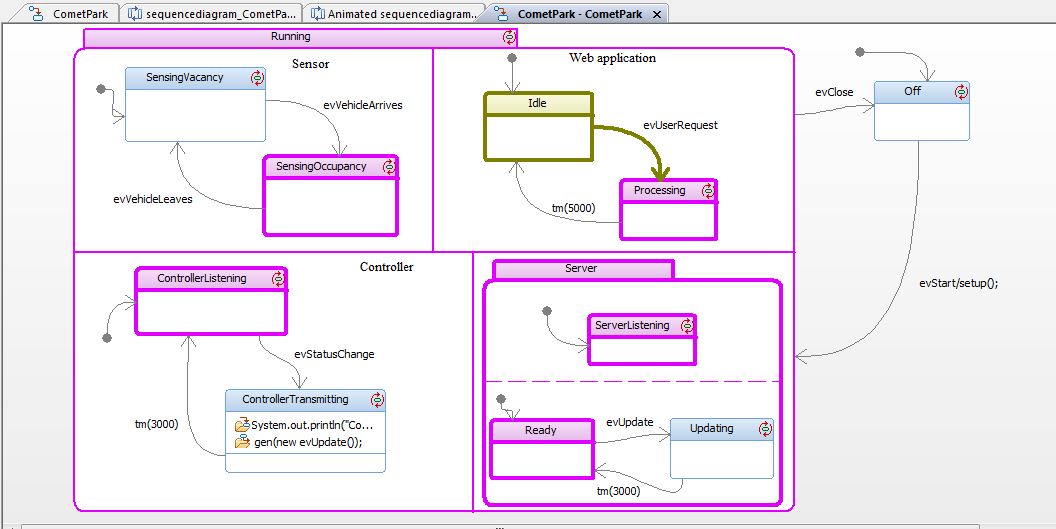


Figure System State: Web Application Receives a User Request

## 3.2 Statechart for each component of the system

### 3.2.1 Sensor

#### 3.2.1.1 Sensing Vacancy

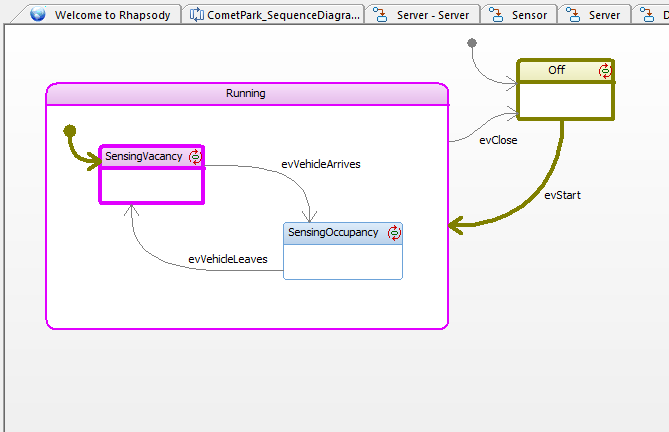
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Figure Sensing Vacancy

#### 3.2.1.2 Sensing Occupancy

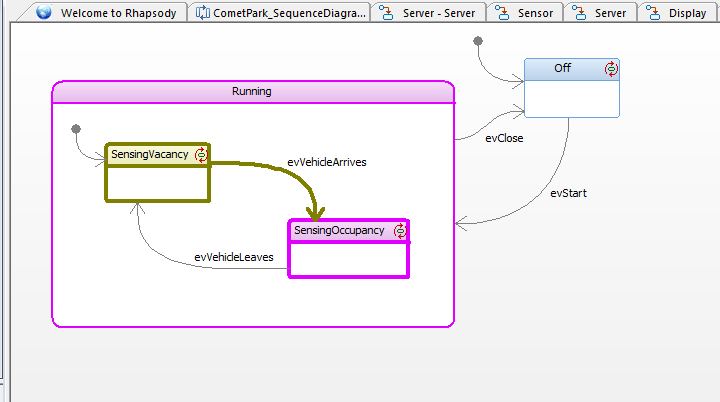


Figure Sensing Occupancy

### 3.2.2 Controller

#### 3.2.2.1 Controller Listening

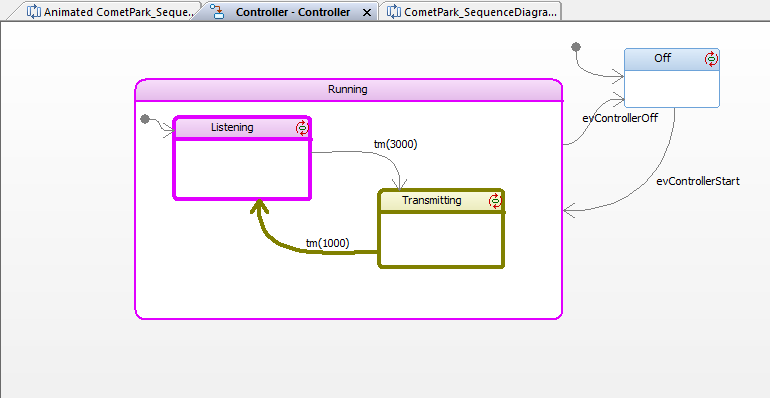


Figure Controller Listening

#### 3.2.2.2 Controller Transmitting

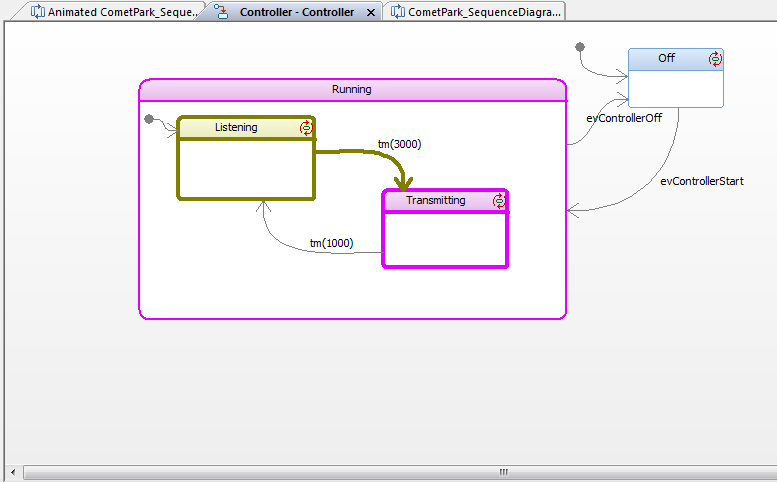


Figure Controller Transmitting

### 3.2.3 Web Application

#### 3.2.3.1 Web Application Idle

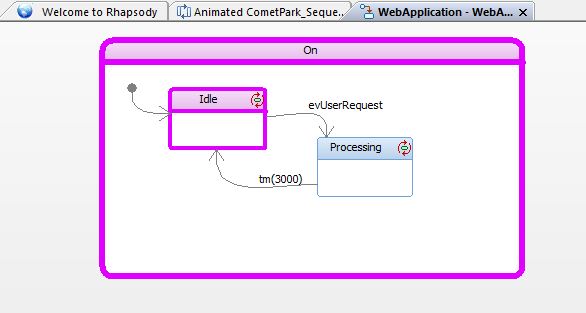


Figure Web Application Idle

#### 3.2.3.2 Web Application Processing

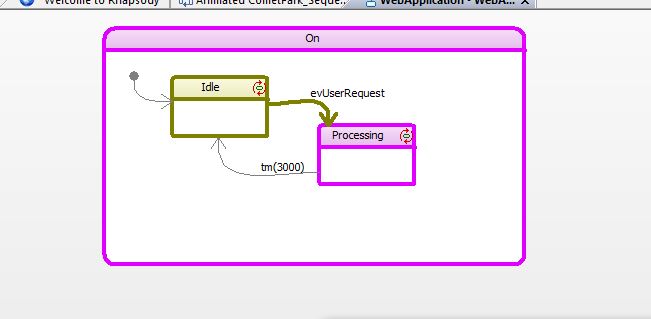


Figure Web Application Processing

#### 3.2.3.3 Web Application After Processing

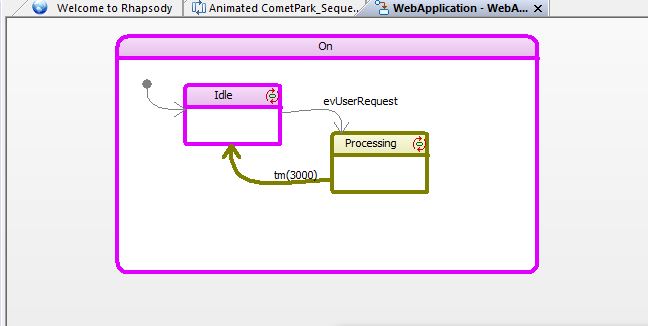


Figure Web Application After Processing

### 3.2.4 Server

#### 3.2.4.1 Server Ready State

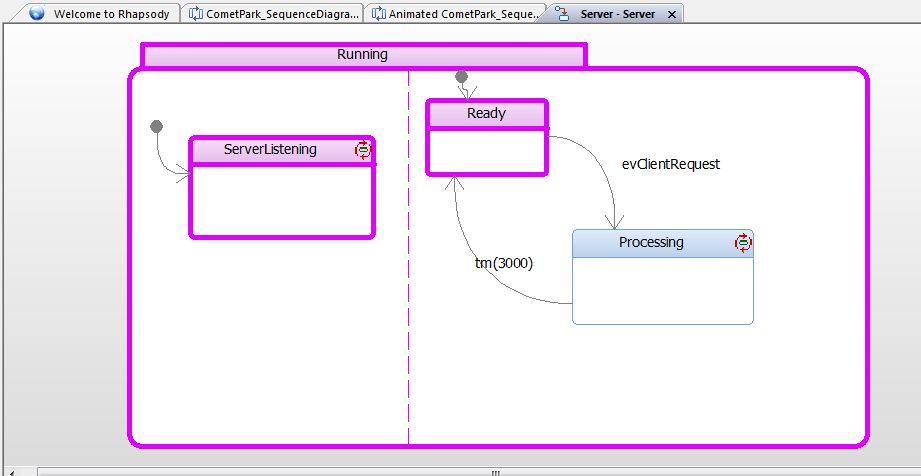


Figure Server Ready State

#### 3.2.4.2 Server Processing

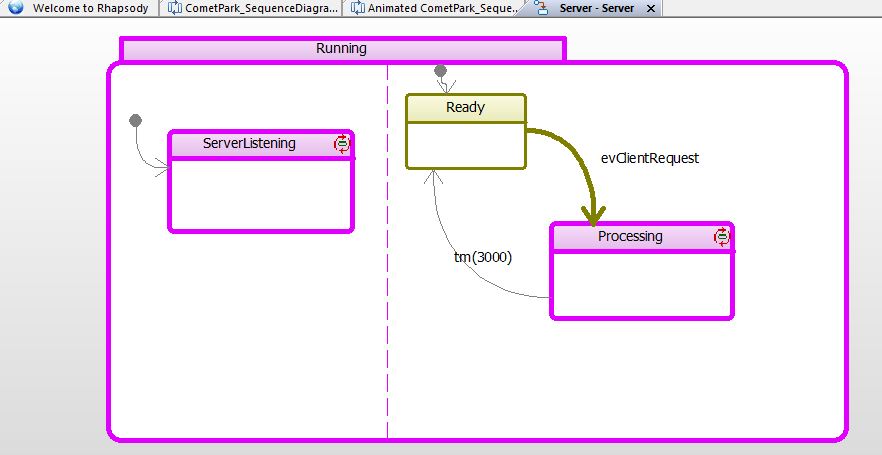


Figure Server Processing

#### 3.2.4.3 Server After Processing

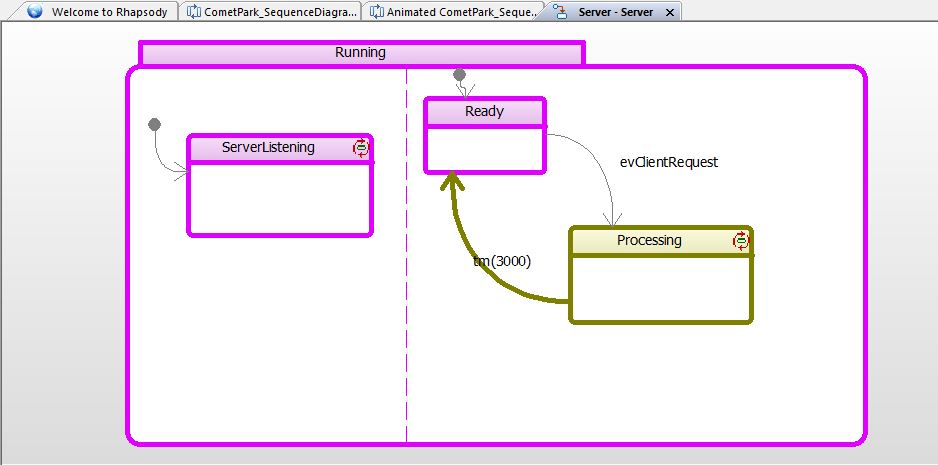


Figure Server After Processing

# Appendix B: References

[1] IBM Rational Rhapsody Tutorial <http://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/topic/com.ibm.help.download.rhapsody.doc/pdf75/tutorialcpp.pdf>

[2] Java Tutorial for Rational Rhapsody <https://publib.boulder.ibm.com/infocenter/rsdp/v1r0m0/topic/com.ibm.help.download.rhapsody.doc/pdf75/tutorialj.pdf>