Design document

## **Use case 1.1**

**Name**: Adding an object  
**Actor**: A user (employee in the electric company).  
**Pre-condition**: /

**MSS**:

1. User selects an object in the toolbox.
2. User clicks on a fixed location for the object on the grid.
3. System sets the object in selected location on the grid.

**Extension:**

**2a**. If user tries to click on a location with an existing object, system will not allow the placement and will not create the object.

## **Use case 1.2**

**Name**: Select a created Building  
**Actor**: user  
**Pre-condition**: / Use case 1.8 enter detection mode

**MSS**:

1. User clicks somewhere on the map.
2. System checks if there is an Building and there is.
3. System selects that object.
4. System shows the info of the selected object.

**Extension:**

**2a.** If there is no object where user is clicking, end of use case.

## **Use case 1.3**

**Name**: Open a configuration panel of a created object  
**Actor**: user  
**Pre-condition**: Use case 1.2 Select a created object

**MSS**:

1. User clicks somewhere on the map.
2. System checks if there is an object and there is.
3. System selects that object.
4. System shows configuration panel of the selected object.
5. User makes changes to the parameters of the object
6. User clicks on save button
7. System saves changes
8. System closes configuration panel

**Extension:**

**2a.** If there is no object where user is clicking, end of use case.

## **Use case 1.4**

**Name**: Delete selected object from map  
**Actor**: user  
**Pre-condition**: Use case 1.2 Select a created object

**MSS**:

1. User clicks somewhere on the map.
2. System checks if there is an object and there is.
3. System selects that object.
4. System shows configuration panel of the selected object.
5. User clicks delete button on panel
6. System deletes the object from the map
7. System closes configuration panel

**Extension:**

**2a.** If there is no object where user is clicking, end of use case.

## **Use case 1.5**

**Name**: Save map configuration  
**Actor**: user  
**Pre-condition**: Use case 1.1 Adding an object

**MSS**:

1. User clicks on ‘save configuration’ button
2. System checks if there is an object placed on the map.
3. System asks where to save file
4. User chooses location
5. User chooses file name
6. User clicks save
7. System saves map configuration in file

**Extension:**

**2a.** If there is no object on the map, error message pops, end of use case.

**5a.** If the file name is in incorrect format an error message is shown and system goes to **5**.

## **Use case 1.6**

**Name**: Weather setting  
**Actor**: user  
**Pre-condition**: Use case 1.1 Adding an object

**MSS**:

1. User clicks on weather type in weather toolbox
2. System changes the weather according to request
3. System changes traffic behaviour according to weather.

**Extension:**

**2a.** If the selected weather type is already been simulated nothing is changed.

**3a.** If the selected weather type is already been simulated nothing is changed.

## **Use case 1.7**

**Name**: Setting time frame  
**Actor**: user  
**Pre-condition**: Use case 1.1 Adding an object

**MSS**:

1. User presses up/down arrow on keyboard or clicks up/down buttons in GUI
2. System checks which button is pressed
3. System changes how time passes according to user input

**Extension:**

**2a.** If user did not press up/down arrow on keyboard or click up/down buttons in GUI, then end of use case

## **Use case 1.8**

**Name**: Enter detection mode  
**Actor**: user  
**Pre-condition**:

**MSS**:

1. User presses the area which is outside the canvas area or press button with cruiser icon.
2. System checks which button is pressed and it is.
3. System change the function of mouse click.

**Extension:**

## **Use case 1.9**

**Name**: Manual trigger an event  
**Actor**: user  
**Pre-condition**:

**MSS**:

1. User clicks on the trigger event button
2. System checks if there are 5 ongoing events already and there are not.
3. System triggers an random event and random location. (building objects, like Road, House…)

## **Use case 2.1**

**Name**: Quit application  
**Actor**: user  
**Pre-condition**:

**MSS**:

1. User clicks quit button
2. System show a message box with 3 buttons yes, no and cancel to ask if user want to save current simulation map(Could: Simulation), and user clicks no
3. Application quited.

**Extension:**

2.1 if user clicks button yes, then proceed Use case 1.5:Save map configuration or 2.3:Save simulation (procedure 1 will be skipped).

2.2 if user clicks button cancel, message box disappear and continue to current simulation map.

## **Use case 2.2**

**Name**: Load simulation map  
**Actor**: user  
**Pre-condition**:

**MSS**:

1. User clicks load button
2. System show a message box with 3 buttons yes, no and cancel to ask if user want to save current simulation map, and user clicks no
3. System shows a open file dialog .
4. User choose a proper file(a saved simulation map, not just random files). And clicks confirm button.
5. System load the map information and redraw the simulation map.

**Extension:**

2.1 if user clicks button yes, then proceed Use case 1.5:Save map configuration (procedure 1 will be skipped).

2.2 if user clicks button cancel, message box disappear and continue to current simulation map.

5.1 if System failed to load the saved map from the file user choose, a message box will be shown to inform user.

## **Use case 2.3(Could)**

**Name**: Save simulation  
**Actor**: user  
**Pre-condition**:

**MSS**:

1. User clicks save simulation button.
2. System shows a save file dialog .
3. User type the name for the file to save and clicks confirm.
4. System save the simulation.

## **Use case 2.4(Could)**

**Name**: resume loaded simulation  
**Actor**: user  
**Pre-condition**:

**MSS**:

1. User clicks load simulation button
2. System show a message box with 3 buttons yes, no and cancel to ask if user want to save current simulation, and user clicks no
3. System shows a open file dialog .
4. User choose a proper file (a saved simulation, not just random files). And clicks confirm button.
5. System load the simulation and resume the simulation.

**Extension:**

2.1 if user clicks button yes, then proceed Use case 2.3: Save simulation (procedure 1 will be skipped).

2.2 if user clicks button cancel, message box disappears and continue to current simulation.

5.1 if System failed to load the saved simulation from the file user choose, a message box will be shown to inform user.

Class diagram

