

# ARELION ROOM PLANNER

## USER MANUAL

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**Warranty and End User License Agreement:** Please note that the software and all documents are subject to Arelion's EULA, available for your review at our web site <http://www.arelion.com> within the product information of Arelion Room Planner.

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# I Introduction

The *Arelion Room Planner* (ARP) is an intelligent planning tool which calculates the optimized assignment of events, rooms and participants.

## I.1 WHAT does this tool do?

The *Arelion Room Planner* is a novel tool for optimization and scheduling of rooms, events and participants.

It combines the power and intelligence of the **Arelion Optimization Core** (Arelion's unique optimization technology) with the simplicity of **Microsoft® Excel**.

This innovative tool enables the user to solve and optimize event planning tasks in a very short amount of time and a superior level of quality.

## I.2 HOW does it work?

The *Arelion Room Planner* installs itself directly into your Microsoft® Excel instance. So, you can work within your familiar environment.

Our plugin provides a Microsoft® Excel template with which you can access its functionality. This template is directly installed to your Microsoft® Excel template directory. So, you are able to create multiple Microsoft® Excel workbooks based on this template. By default, the template provides some demo data, which allows you to directly start with an optimization run.

The template contains 6 sheets:

- *Rooms*: Here you provide information about rooms where events are going to take place. Rooms consists of the following attributes: *Room Name*, *Capacity* and *Room Type*.
- *Events*: Here you provide information about events to schedule. Events consists of the following attributes: *Event ID* (which has to be unique), *Name*, *Event Type*, *Number of required time slots*, *Capacity*, *Room Type* and *Speaker*.
- *Assignments*: Here you provide information about participants and their required event types.
- *Configuration*: Here you provide additional configuration parameters. The following configuration parameters are required: *Earliest Start* of an event (based on a daily basis), *Latest End* of an event, *Preparation Time* between two events at the same room, *Length of a single time slot*, *Capacity Buffer per Event Type* (comparing the sum of all capacities of all events of a specific event type and the participant demand for this event type), *Participant Time Schedule Buffer* (comparing a single participants' required event types time and the total available time) and *Room Workload Buffer* (comparing the available duration of all rooms of a specific room type and the required duration of all events that require the specific room type).
- *Output*: The optimizer fills this sheet after each optimization run.
- *Output Errors*: The optimizer fills this sheet with participant(s) that could not be scheduled after the optimization run.

Additionally, the installation process creates a new menu tab, called *Arelion*, within your Microsoft ® Excel instance, which allows you to:

- Start the optimization
- Configure the optimization target priorities
- Configure some optimization parameters
- Open/Close the visualization of the optimized schedule<sup>1</sup>
- Show you a brief instruction
- Show your license state
- Provide some information about the company and the installed Arelion plugin(s)

### 1.3 What REQUIREMENTS are necessary to run it?

*Arelion Room Planner* is a plugin for Microsoft ® Excel. Consequently it requires a working instance of Microsoft ® Excel (and Microsoft ® Windows). Therefore, the minimum system requirement is Microsoft ® Excel 2007. All other dependencies (if necessary) are checked during the setup routine. The plugin was tested using Microsoft ® Excel 2007, Microsoft ® Excel 2010 and Microsoft ® Excel 2013.

## 2 Installation

This section illustrates how to get the *Arelion Room Planner* and how to install it.

### 2.1 Where to get the tool

The current version of the *Arelion Room Planner* can be downloaded at our website, <http://www.arelion.com>. Additional, you will find the corresponding User Manual and EULA.

### 2.2 How to verify the setup.exe

The *setup.exe* file is signed with a trusted certificate. In order to verify the authenticity of the setup file please check if it is correctly signed and the certificate shows “Arelion GmbH” as owner.

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<sup>1</sup> Attention: the view does not support updates, if data is modified or if a saved *Arelion Room Planner* work-book is opened. In all cases, a new optimization run is required.

## 2.3 Installation process

Please execute *setup.exe* and follow the instructions of the installation wizard. In order to execute the optimization of the *Arelion Room Planner* a valid license is required. Arelion provides a free, fully functional, 30-day-trial-license. Consequently, after installing *Arelion Room Planner* the license dialog opens, which leads you through the process of acquiring your demo license. More information about the license process may be found in chapter 6. After the installation process, please start your Microsoft ® Excel and finally agree to add the *Arelion Room Planner* plugin to your instance.

## 3 Plugin content description

This section describes the plugin components and how they work.

### 3.1 Arelion Room Planner Template

Depending on your Microsoft ® Excel version, the *Arelion Room Planner* template is copied to your default user template folder. Consequently, it is now globally available in Microsoft ® Excel. The template itself does not contain any code or scripts, it just provides the necessary tables for the data. You can start a new *Arelion Room Planner* workbook by creating a new template based workbook. More information how to create the ARP workbook specifically for your Microsoft ® Excel version may be found in chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**

After creating a new Arelion Room Planner workbook it can be saved at any location within your file system.

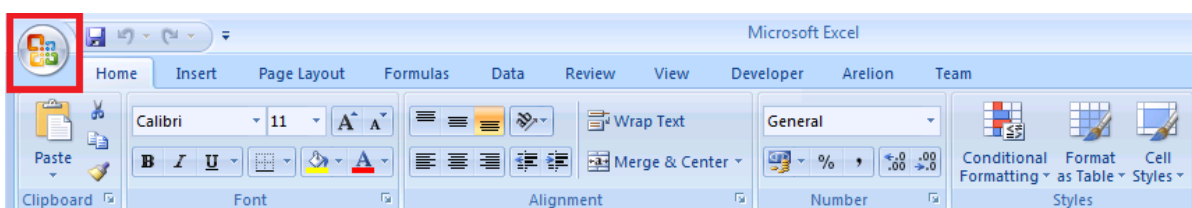
If you use the Arelion Room Planner on other systems, please keep in mind that an installation of our software is required. The data itself can be used on and transferred to other computers just like any excel workbook.

#### 3.1.1 Template in different Microsoft ® Excel Versions

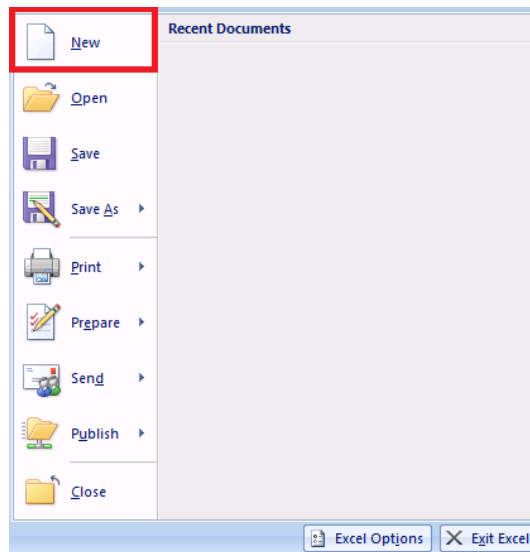
This chapter illustrates how to find and open the Arelion Room Planner Template in Microsoft ® Excel 2007, Microsoft ® Excel 2010 and Microsoft ® Excel 2013.

##### 3.1.1.1 Microsoft ® Excel 2007

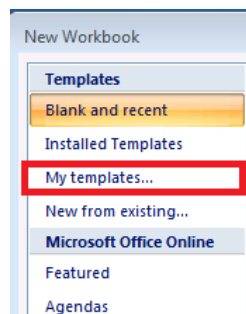
- Click on the Microsoft Office “home button” at the menu bar.



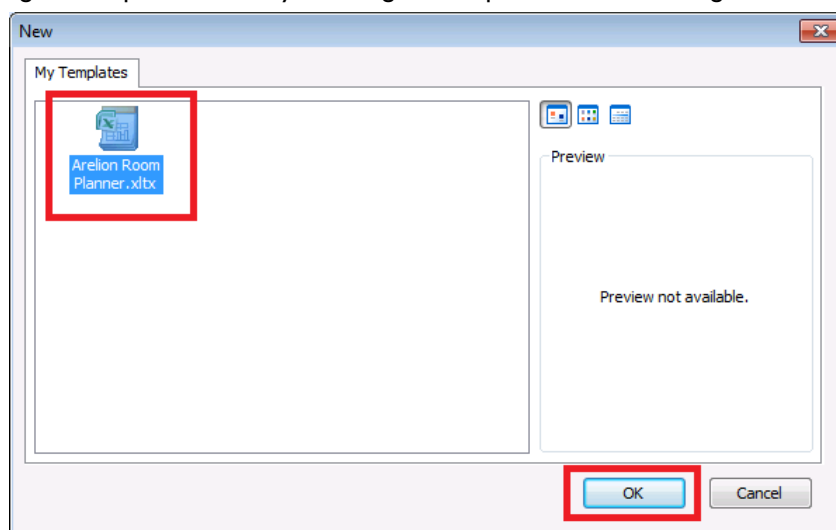
- Details of this menu item appear, click on *New*.



- After clicking on *New*, details of this menu item appear, click on *My templates*.



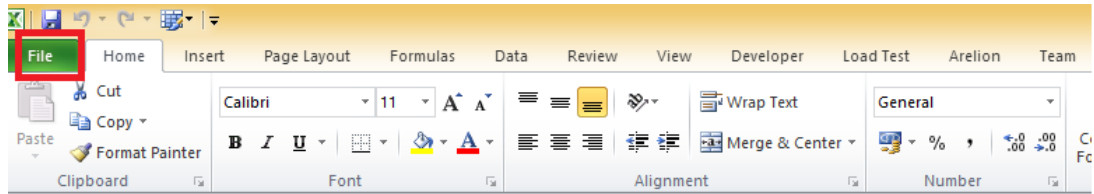
- A new window with all available templates appears. You can open the *Arelion Room Planner* template by double-clicking the template icon or by selecting the template icon and clicking on the OK button.



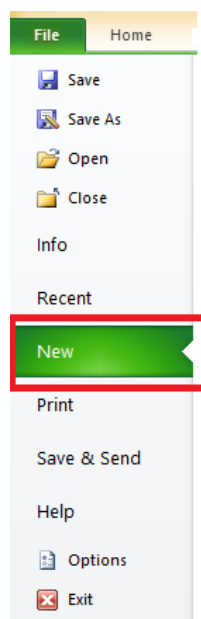


### 3.1.1.2 Microsoft® Excel 2010

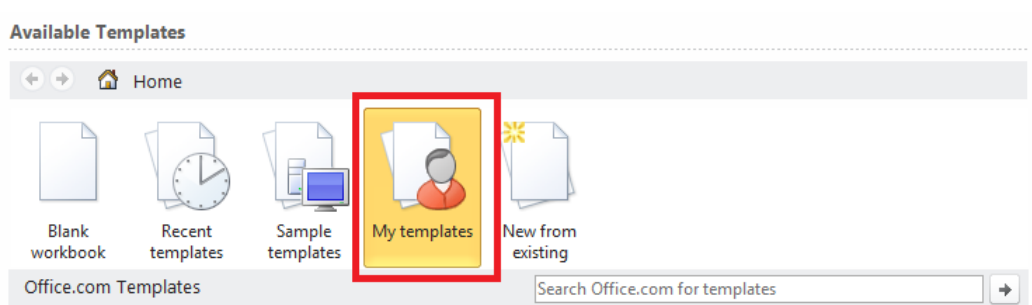
- Click on *File* at the menu bar.



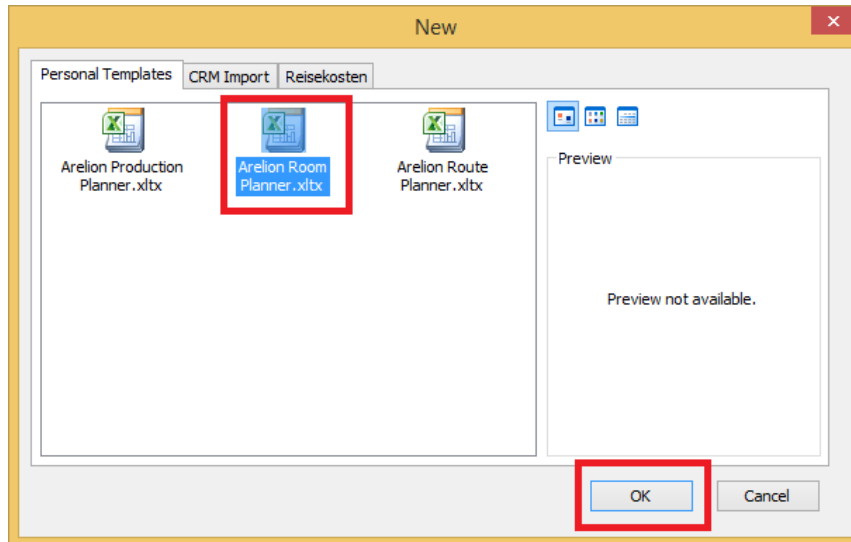
- Details of this menu item appear, click on *New*.



- After clicking on *New*, details of this menu item appear, click on *My templates*.

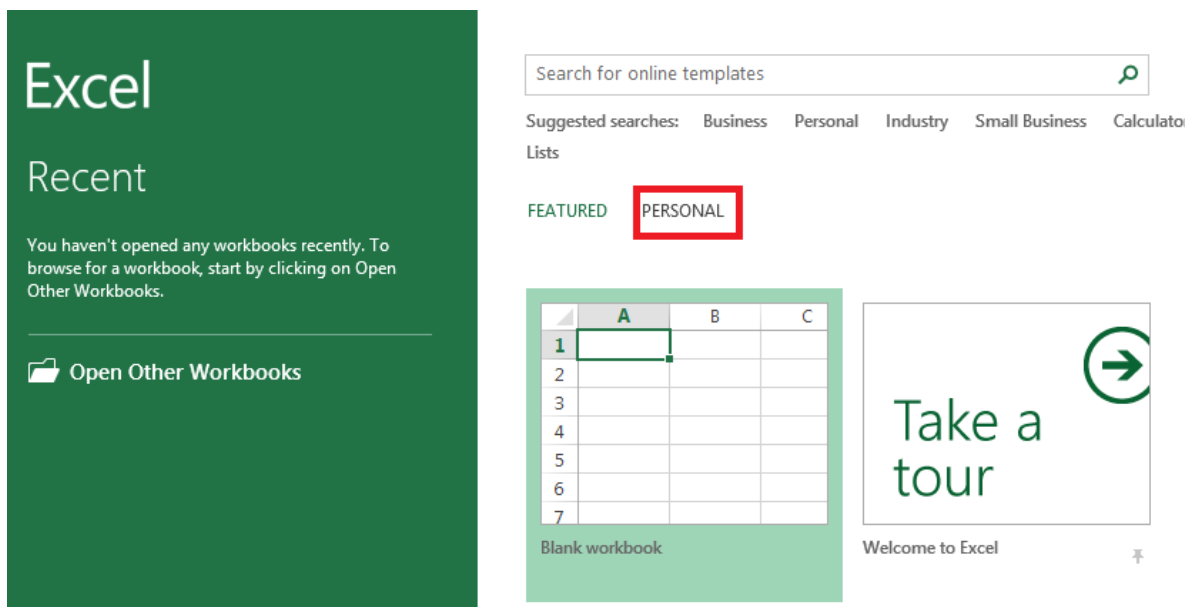


- A new tab window appears. Select the tab labelled *Personal Templates*. You can open the *Arelion Room Planner* template by double-clicking the template icon or by selecting the template icon and clicking on the OK button.

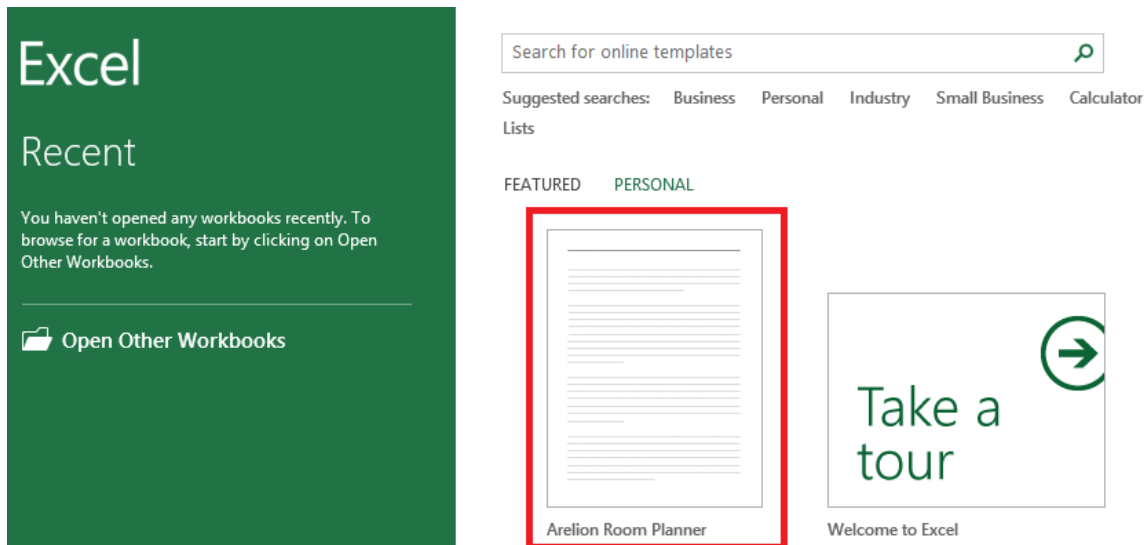


### 3.1.1.3 Microsoft ® Excel 2013

- Click on the label *Personal*.

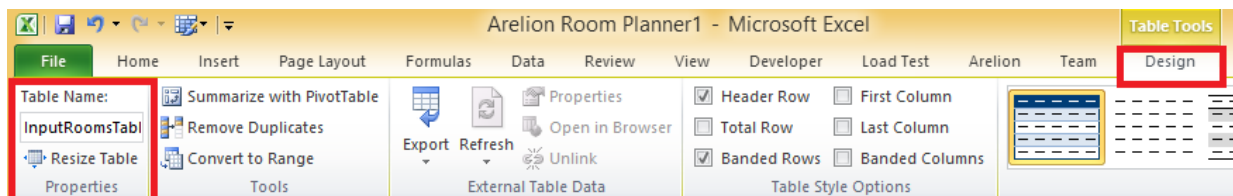


- After clicking on the label *Personal*, the *Arelion Room Planner* template should appear. You can open the *Arelion Room Planner* template by clicking the template icon.



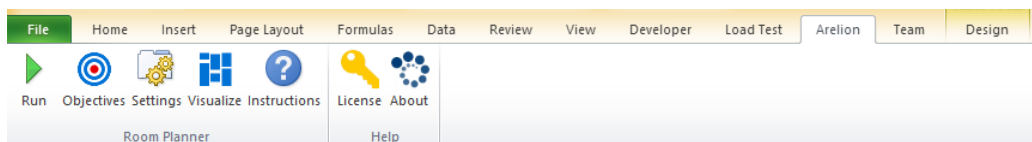
### 3.1.2 Change Template design

Keep in mind that the modification of any table or sheet over the *Design* tab leads to an inoperable *Arelion Room Planner* workbook.



## 3.2 Arelion Ribbon elements description

The *Arelion Room Planner* installs an *Arelion* menu tab:



- **Run-Button:** Starts the optimizer as separate process, working on the input data as provided in the different input data sheets (such as *Rooms*, *Events*...).
- **Objectives-Button:** Opens the objective priorities dialog that allows changing the priorities of different optimization targets.
- **Settings-Button:** Opens the settings dialog that allows changing parameters for the optimization.

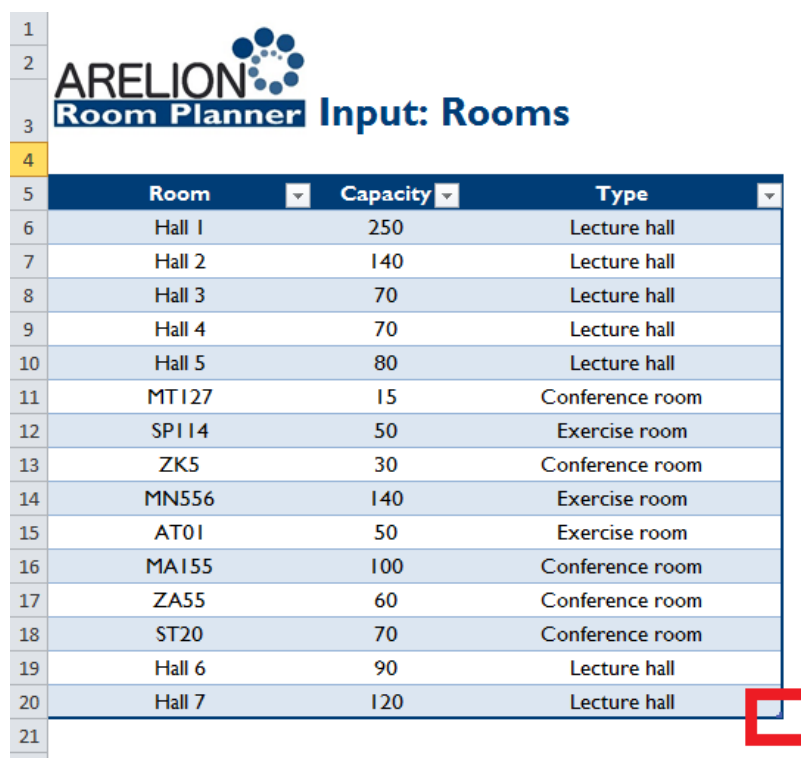
- *Visualize-Button*: Opens a visualization of the current output.
- *Instructions-Button*: Shows a brief introduction of how to use the *Arelion Room Planner*.
- *License-Button*: Opens the license dialog to provide information about your license state or to install/update a license file.
- *About-Button*: Opens a dialog with information about the company and *Arelion Room Planner*.

### 3.3 Sheets

The *Arelion Room Planner* provides six sheets, named: *Rooms*, *Events*, *Assignments*, *Configuration*, *Output* and *Output Errors*. You must not change the names of these sheets in order to ensure the functionality of the plugin.

#### 3.3.1 Rooms

The *Rooms* table provides the rooms and the room attributes. The example consists of seven rooms with their respective attributes. The size of this table can be changed by dragging the lower right corner at the small triangle. When its size is reduced, content outside the *Rooms* table is deleted. Only data inside the table is used for the optimization process. The *Rooms* sheet does not allow editing outside the *Rooms* table.



Room	Capacity	Type
Hall 1	250	Lecture hall
Hall 2	140	Lecture hall
Hall 3	70	Lecture hall
Hall 4	70	Lecture hall
Hall 5	80	Lecture hall
MT127	15	Conference room
SPI 14	50	Exercise room
ZK5	30	Conference room
MN556	140	Exercise room
AT01	50	Exercise room
MA155	100	Conference room
ZA55	60	Conference room
ST20	70	Conference room
Hall 6	90	Lecture hall
Hall 7	120	Lecture hall


Each line represents the attributes of a specific room:

- *Room*: the unique name of the room
- The maximum *capacity* of the room
- The room *type*: There can be more than one room with same room type.

All the columns of the *Rooms* table can be sorted and / or filtered.

### 3.3.2 Configuration

The Configuration table shows various important settings.

			Input: Configuration
	Name	Value	
6	Earliest Start	08:00	
7	Latest End	20:00	
8	Preparation Time	00:15	
9	Length of Unit	00:45	
10	Capacity Buffer per Event Type	20,00%	
11	Participant Time Schedule Buffer	120	
12	Room Workload Buffer	20,00%	

- *Earliest start*  
All events must start at this date or later. The value has the format (HH:mm).
- *Latest end*  
All events must end at least at this date. The value has the format (HH:mm).
- *Preparation time*  
This is the needed duration to prepare a room before starting an event. The value has the format (HH:mm).
- *Length of unit*  
The duration of a time slot (i.e. unit). The value has the format (HH:mm).
- *Capacity Buffer per Event Type*  
The plugin requires that for a particular event type the demand of all participants can be satisfied with enough event capacity. By increasing this buffer, *Arelion Room Planner* checks if there is more capacity buffer available. The buffer value has to be given in percent. In the example above, for each event type there have to be at least 20% more event capacity than the demand of the participants.
- *Participant Time Schedule Buffer*  
This buffer enables the *Arelion Room Planner* to avoid an entirely planned day for each participant. The value has to be stated as minutes. In the example above, each student can have at least events with a total time span of 10 hours (the timespan between 20:00 and 8:00 minus 120 minutes). This buffer is also used for speakers.
- *Room Workload Buffer*  
This buffer provides more planning space for rooms. By default, *Arelion Room Planner* checks if the available duration of all rooms of a specific room type and the required duration of all events that require the specific room type can be fulfilled. A buffer value, which has to be stated as percent value, greater than zero checks if the duration of all rooms of a specific room type is greater or equal than the durations of all events that requires this particular room type increased by the workload buffer.

### 3.3.3 Events

The Events table shows a list of available events.<sup>2</sup>

ID	Name	Event type	Number of slots	Capacity	Room type	Speaker
Soft1PM	Programming for beginners	Soft I	1	20	Conference room	Peter Malone
Soft1JN	Programming for beginners	Soft I	1	25	Lecture hall	John Newman
Soft1A	Programming for beginners	Soft I	2	20	Lecture hall	John Newman
Soft2PM	Advanced software engineering	Soft II	2	20	Lecture hall	Peter Malone
Soft2TP	Advanced software engineering	Soft II	2	25	Lecture hall	Michael Pasching
AlgoTP	Algorithms and data structure	Algo	1	22	Conference room	Werner Reiter
AlgoTP1	Algorithms and data structure	Algo	1	15	Conference room	Werner Reiter
OptRS	Optimization technologies	Opt	1	25	Conference room	Simon Postler
OptRS1	Optimization technologies	Opt	2	25	Conference room	Simon Postler
OptRS2	Optimization technologies	Opt	2	30	Conference room	Simon Postler

Each line represents the attributes of a specific event:

- The unique *ID*
- The *name*
- The *type*: a participant assigns for an event type not for a particular event. *Arelion Room Planner* decides, which event fits best for the required event type.
- The *number of slots*  
This value is a multiplier to the length of a single time unit, which length is specified in the *Configuration* sheet. Consequently, the number of slots multiplied to the length of a unit results in the duration of the event (e.g. length of unit: 45 minutes, number of slots: 2 => duration is 90 minutes)
- The *capacity*  
The maximum amount of participants that are allowed to attend the event.
- The *room type* of the room in which the event must take place. *Arelion Room Planner* decides which room fits best according to the *room type*.
- The *speaker*, a person who is responsible for the event. A speaker can be responsible for more than one event, which is also recognized by the scheduler.

All the columns of the Events table can be sorted and / or filtered.

<sup>2</sup> Attention: *Arelion Room Planner* does not necessarily schedules all events, if not all possible events are necessary to fulfill the demands of the participants.

### 3.3.4 Assignments

The Assignments table shows a list of participant demands to various event types.

ARELION Room Planner Input: Assignments											
Participant	Soft I	Soft II	Algo	Opt	Market	Math I	Math II	Law I	Law II	Office Management	
John Newman		x	x	x	x		x				
Peter Malone			x	x		x	x			x	
David Jones	x	x		x	x	x					
Mike Dunham	x	x		x			x				
Emma Johnson	x				x	x	x	x		x	
Andrew Brown		x	x	x	x		x				
Mary Wilson			x	x	x		x	x			
Linda Davis		x	x	x	x						

Each line represents a request of a specific participant to one or more event types:

- *Participant*: participant name
- *Event types*: all available event types, specified in the *Events* sheet. The available event types are automatically updated if event types in the *Events* sheet change.
- An “x” in an event type column denotes that a participant would like to attend an event of this event type. For example the participant “John Newman” would like to attend events of the following event types: “Soft II”, “Algo”, “Opt”, “Market” and “Math II”.

All the columns of the Assignments table can be sorted and / or filtered.

### 3.3.5 Output

The output table shows the result of the optimization.

ARELION Room Planner Output							
Event Id	Event Name	Participant	Start	End	Room		
AlgoTP	Algorithms and data structure	Bertold	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Édouard	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Eduard	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Egmund	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Gastone	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Gaudens	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Gaudenz	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Gavin	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Gavril	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	Georg	10:00	10:45	ZK5		
AlgoTP	Algorithms and data structure	George	10:00	10:45	ZK5		

Each line represents the scheduled data of a participant to a specific event:

- *Event Id*: the Id of the event (matches to an Id in the *Events* sheet)
- *Event Name*: the name of the event (matches to the event name in the *Events* sheet)
- *Participant*: the participant who takes part in the event

- The scheduled *start* time of the event
- The scheduled *end* time of the event
- The assigned *room* for the event (matches to a room name in the *Rooms* sheet)

All the columns of the Output section can be sorted and / or filtered.

Please keep in mind that the data within the Output section are refreshed after every optimization run.

### 3.3.6 Output Errors

The *Output Errors* sheet shows participants that could not be scheduled by the optimizer. This sheet is only visible if the optimizer was not able to schedule all event type requests.

You can react to output errors in two ways:

- Provide more optimization time and restart the optimization
- Change the input data, e.g. provide more events or change the participant demands, etc. and restart the optimization.

## 4 How to work with Arelion Room Planner

This section describes how to work with the *Arelion Room Planner*.

### 4.1 Provide Input data

The input data have to be provided in the different (input) sheets of *Arelion Room Planner* such as *Rooms*, *Configuration*, *Events* and *Assignments*. It is possible to resize the input section in order to add/remove values (right/bottom end of the section).

### 4.2 Change column names

You are not able to change column names, because the column names are important for a correct behavior of the application. When clicking on a column name cell the cursor is positioned inside the table.



### 4.3 Necessity and consistency of input data

You must fill in the data in the suitable format.

Before starting an optimization run, the following data consistency checks are done:

- The following tables must not be empty: Rooms table, Events table, Assignments table and Configuration table.
- All tables mentioned above must contain data in suitable format.
- The uniqueness of unique attributes are checked.
- Existing rows must not be empty.

More input data validation checks are presented in chapter 5.

### 4.4 Running the optimizer

The optimization starts, when clicking the *Run*-Button within the *Arelion*-tab. After the optimization, the output is written into the *Output* sheet.

Please note that during the optimization a high amount of CPU time is required. Consequently, depending on your system, other applications may work slower during the optimization process.

### 4.5 Interpretation of output

1	ARELION Room Planner Output					
2						
3						
4						
5	Event Id	Event Name	Participant	Start	End	Room
6	AlgoTP	Algorithms and data structure	Bertold	10:00	10:45	ZK5
7	AlgoTP	Algorithms and data structure	Édouard	10:00	10:45	ZK5

The example above shows that the event with the Id “AlgoTP” and the event name “Algorithms and data structure” is scheduled from 10:00 to 10:45. The participants are “Bertold” and “Édouard”. The assigned room is “ZK5”.

## 4.6 Visualization

A graphical representation of the result in form of a time table opens when clicking on *Visualize* within the *Arelion*-tab. The schedule opens in a docked Microsoft ® Excel window. This window can be set to a floated window, resized, and docked on every position within the possibility of Microsoft ® Excel. There are three kinds of visualization: Visualization by room, participant and speaker. The picture below shows visualization by room. Events of the same event type have the same color.

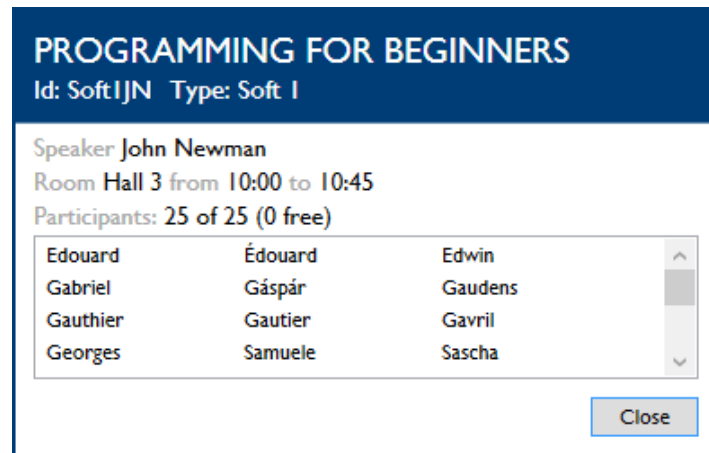


The visualization window represents the used room names in the upper part of the window. The depicted result has four scheduled rooms.

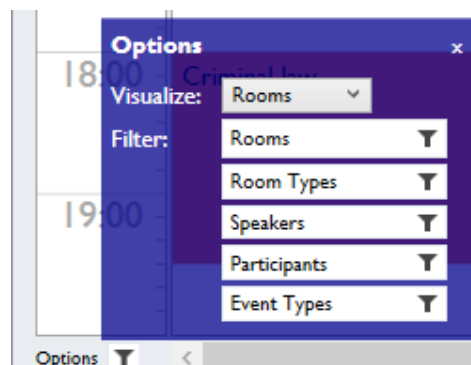
On the left of the visualization there is a time bar. This bar helps you to get information about the scheduled events such as the start time of the event, the end time of the event and the event duration.

Each colored rectangle within the time table represents a scheduled event, e.g.: the event with the name “Algebra” takes place in room “SPI 14”.

By clicking on an event (i.e. the colored rectangle) a dialog appears with more detailed information for the particular event.

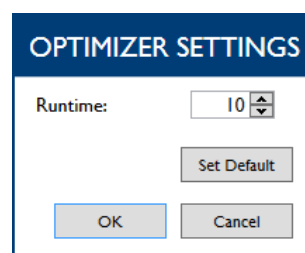


At the bottom left corner of the visualization, there is an area labelled *Options*. By clicking on the filter button, a dialog appears. In this dialog you can switch between the three kinds of visualizations (visualization by room, participant and speaker) and filter the optimization result by room(s), room type(s), speakers(s) and participant(s) and event type(s).



## 4.7 Optimizer settings

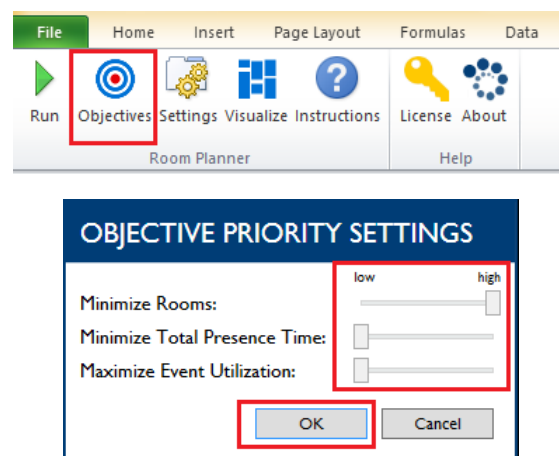
To change the optimizer setting(s), click onto the *Settings*-Button within the *Arelion*-Ribbon. Afterwards, the optimizer settings window opens.



Currently, only setting the optimizer runtime is allowed. By default, the value is set to 10 seconds, which means that the optimizer runs for 10 seconds and returns the best result found in this runtime. Given more runtime may improve the optimization result. The values set in optimizer settings window, are reused in the current Microsoft® Excel session. They are not stored or exchanged between different Microsoft® Excel sessions.

## 4.8 Optimization Objectives

To change the optimization objectives, click onto the *Objectives*-Button within the *Arelion*-Ribbon. Afterwards, the optimization objectives window opens.



There are three optimization objectives:

- Rooms: minimize the amount of used rooms.
- Total presence Time: minimize the presence time of all participants.
- Event Utilization: maximize the average event utilization of all participants.

You can adjust these three goals from low to high importance.

## 4.9 Running multiple instances of the optimizer

You can open and work on different *Arelion Room Planner* workbooks at the same time. You are also able to start and run optimization runs during the same time in different workbooks. Nevertheless, please keep in mind that optimization requires lots of resources (CPU, memory) of your system. Each optimizer currently grabs all available CPU cores for its purposes. Therefore, we recommend running only one optimization at the same time.

## 4.10 Sharing the spreadsheet

You can share *Arelion Room Planner workbooks* with arbitrary people. If other people do not have *Arelion Room Planner* installed, the workbook can only be used as “normal” Microsoft ® Excel workbook without the functionality of *Arelion Room Planner*. Please note that *Arelion Room Planner* checks the consistency of an *Arelion Room Planner* workbook. So, if you change workbooks content or formatting outside our plugin, the workbook may not work properly.

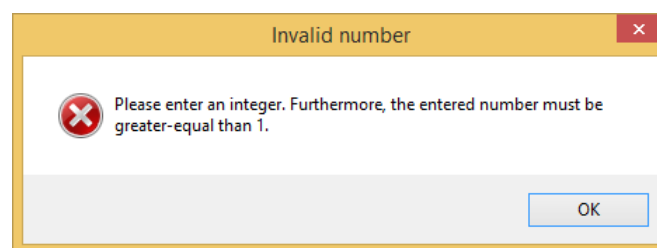
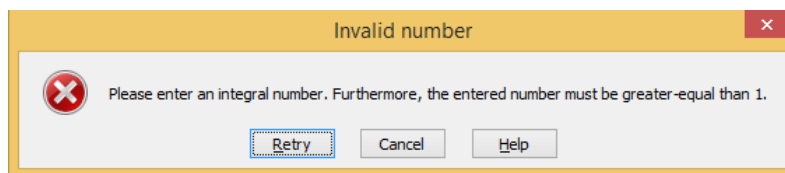
## 5 Validation

This section describes various validation checks and related error messages.

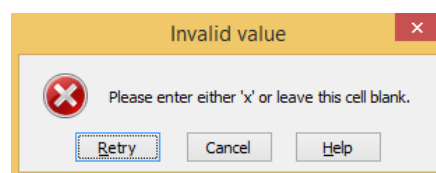
### 5.1 Static Validation

The static validation is done by Microsoft ® Excel. This action is performed after entering a value in a cell.

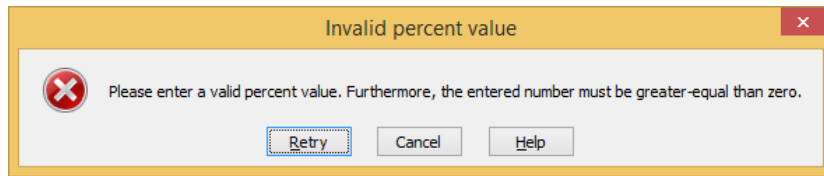
- When the room capacity, the event duration or the event capacity is less than one or not an integer value one of the following dialogs appears.



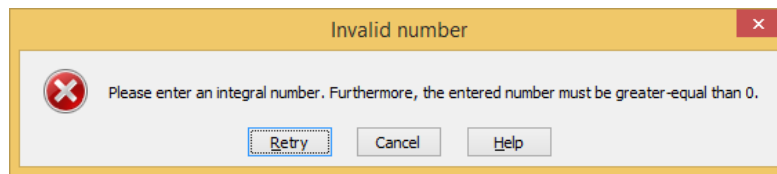
- When you do not enter the character “x” to assign a person to an event type in the Assignments table one of the following dialogs appears.



- Percent values of the configuration table must be greater or equal than zero and less or equal than hundred. These two values are concerned: the *Capacity Buffer per Event Type* and the *Room Workload Buffer*. One of the following dialogs appears when one of the conditions mentioned above does not apply.



- When the *Time Scheduler Buffer* value is less than zero one of the following dialogs appears.

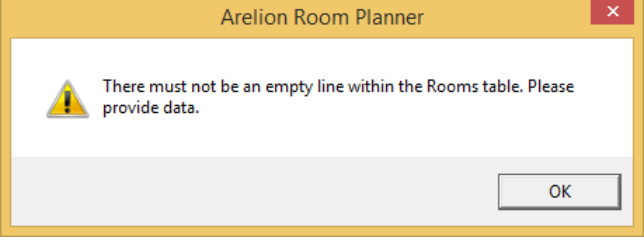
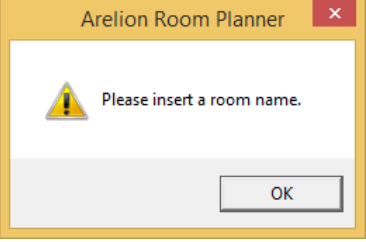
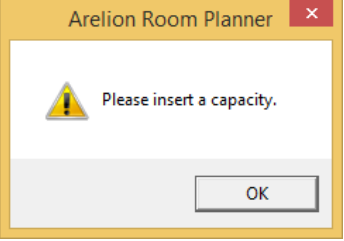
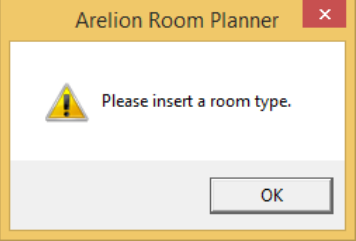
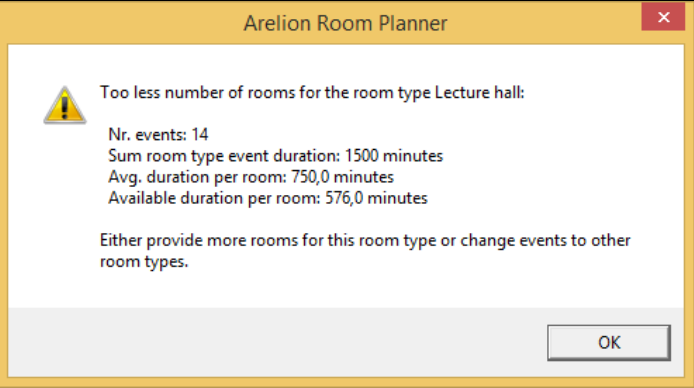


## 5.2 Dynamic Validation

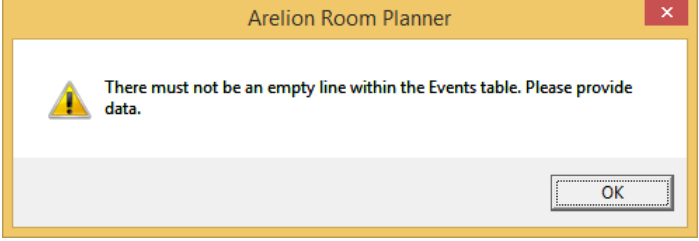
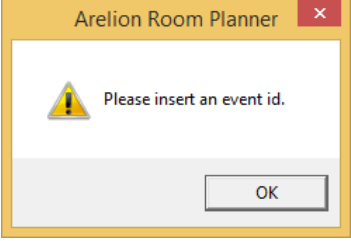
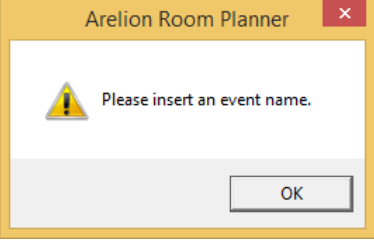
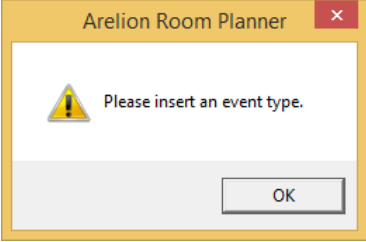
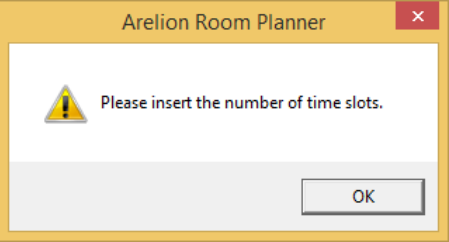
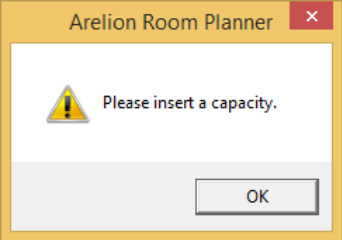
The dynamic validation is done by *Arelion Room Planner*. This action is performed before starting the optimization process.

Error Message	Explanation
	<p>This dialog appears if you try to remove any Arelion Room Planner table. In this example, the user tried to remove the Rooms table.</p>

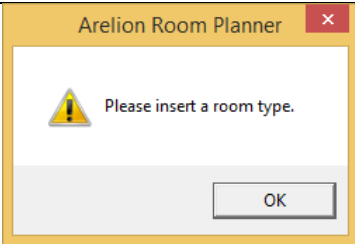
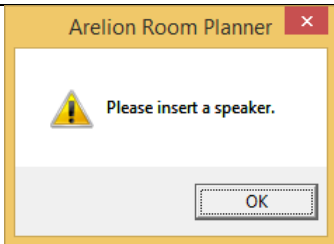
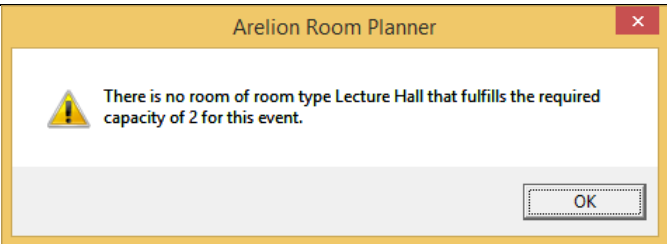
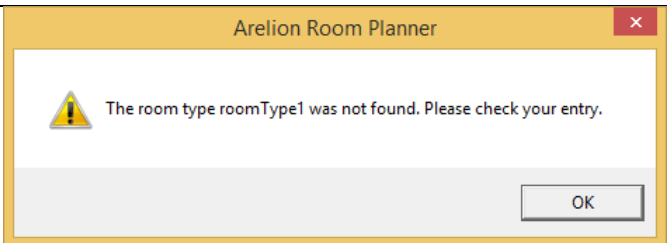
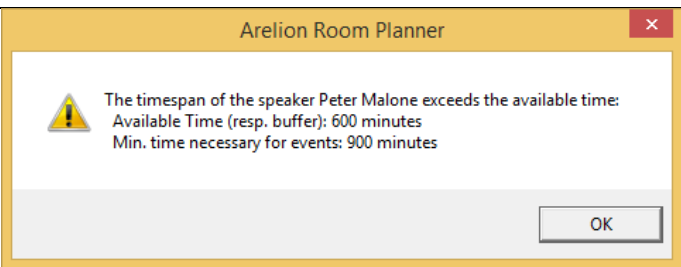
## 5.2.1 Rooms Sheet

Error Message	Explanation
	Appears if there is an empty line within the Rooms table.
	Appears if the room within the Rooms table doesn't have a name
	Appears if a room doesn't have a capacity.
	Appears if a room doesn't have a room type.
	Appears if there are too less rooms of a specific room type.

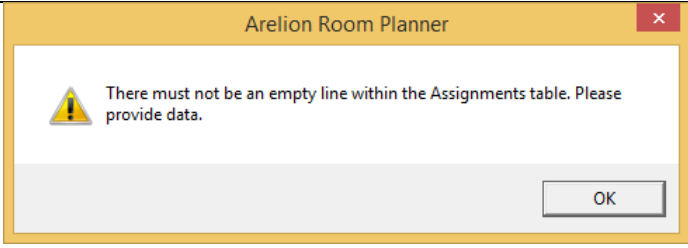
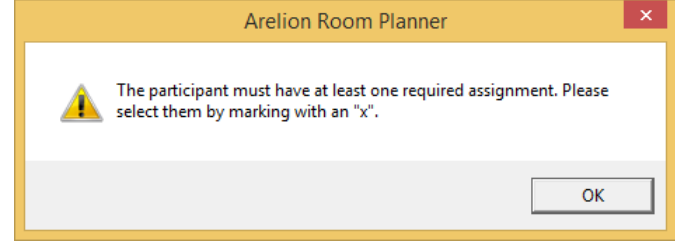
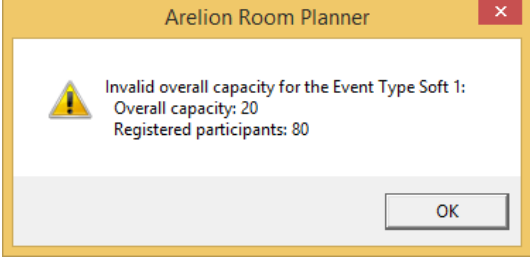
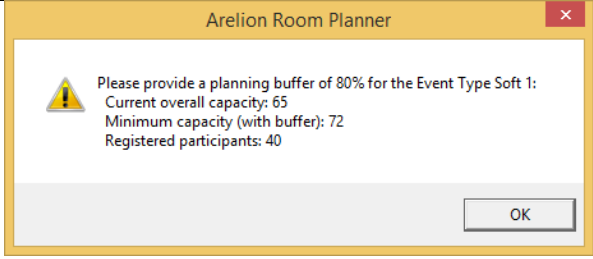
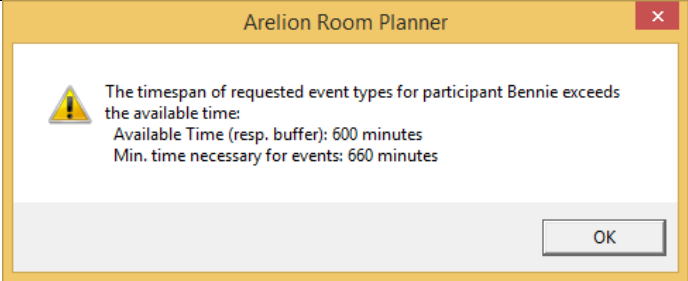
## 5.2.2 Events Sheet

Error Message	Explanation
	<p>Appears if there is an empty line within the Events table.</p>
	<p>Appears if an event doesn't provide an event id.</p>
	<p>Appears if an event doesn't provide an event name.</p>
	<p>Appears if an event doesn't provide an event type.</p>
	<p>Appears if an event doesn't provide the required number of time slots.</p>
	<p>Appears if an event doesn't provide a capacity.</p>

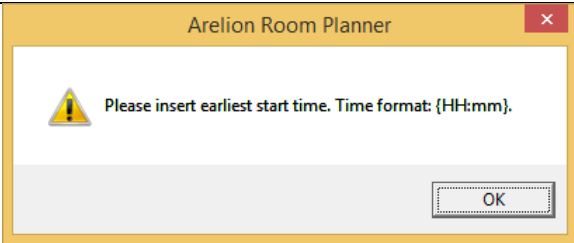
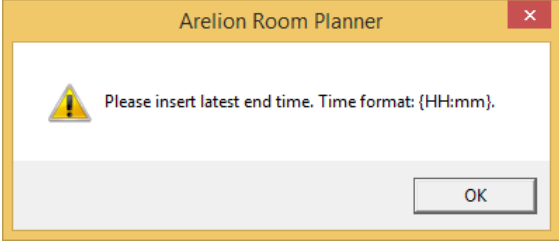
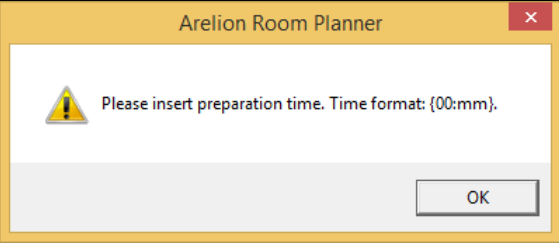
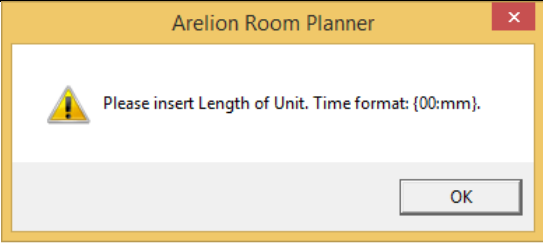
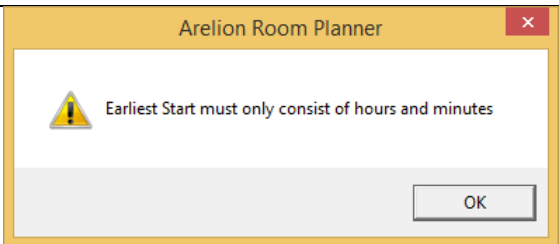
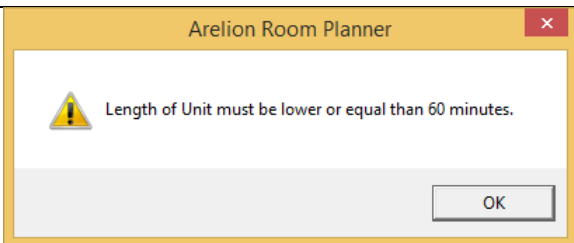


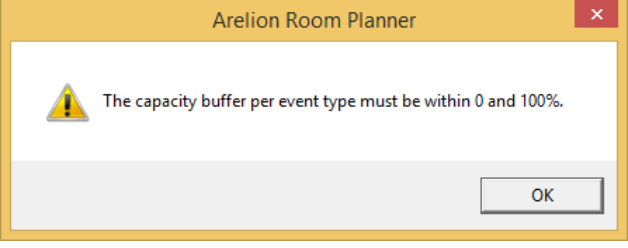
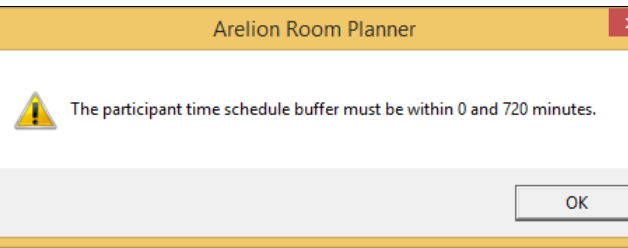
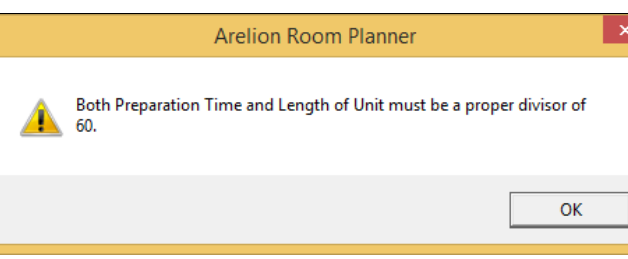
	<p>Appears if an event doesn't provide a required room type.</p>
	<p>Appears if an event doesn't provide a speaker.</p>
	<p>Appears if there is no existing room of the specified room type which is large enough for this event.</p>
	<p>Appears if an event requires a room type that cannot be found in Rooms table.</p>
	<p>Appears if overall desired event type duration including the <i>Participant Time Schedule Buffer</i> for a speaker exceeds the whole day duration.</p>

### 5.2.3 Assignments Sheet

Error Message	Explanation
	Appears if there is an empty line within the Assignments table.
	Appears if a participant doesn't have any event type cell marked with an "x".
	Appears if the amount of registered participants for a specific event type is greater than the event type's overall capacity.
	Appears if the amount of registered participants for a specific event type including the <i>Capacity Buffer per Event Type</i> is greater than the overall capacity of the concerned event type.
	Appears if overall desired event type duration including the <i>Participant Time Schedule Buffer</i> for a participant exceeds the whole day duration.

## 5.2.4 Configuration Sheet

Error Message	Explanation
	Appears if the earliest start time is missing.
	Appears if the latest end time is missing.
	Appears if the preparation time is missing.
	Appears if the Length of Unit is missing.
	Appears if a given date (for <i>Earliest Start</i> , <i>Latest End</i> , <i>Preparation Time</i> and <i>Length of Unit</i> ) has a format that cannot be used by Arelion Room Planner.
	Appears if <i>Preparation Time</i> or <i>Length of Unit</i> is invalid, i.e. a larger duration than 60 minutes.

	<p>Appears if either <i>Capacity Buffer per Event Type</i> or <i>Room Workload Buffer</i> is out of range.</p>
	<p>Appears if the <i>Participant Time Schedule Buffer</i> value is greater than the difference of latest end and earliest start (<i>Latest End – Earliest Start</i>) or less than zero.</p>
	<p>Appears if the sum of <i>Preparation Time</i> value and <i>Length of Unit</i> value is not a proper divisor of the total available time (<i>Latest End – Earliest Start</i>), otherwise there would be time table arrangement problems.</p>

## 6 Licensing

This chapter explains how to proceed with the Arelion License Tool in order to get a valid license for the *Arelion Room Planner*. Note that Arelion grants a fully functional demo license for 30 days. If you want to use *Arelion Room Planner* for a longer period, please contact our sales team ([sales@arelion.com](mailto:sales@arelion.com)).

### 6.1 Licensing policy

In order to use *Arelion Room Planner*, you have to accept our end user license agreement (EULA) during the installation process. Arelion grants a fully functional demo license for 30 days. In order to get a license you have to provide a valid email address. The license file is sent directly to the given email address and can be installed using the Arelion License Tool.

## 6.2 Arelion License Tool

The license tool is modeled as a wizard which leads you through the installation process. It is opened after the installation process of our software. Additionally, you can open the license tool by clicking onto the *License-Button* within the *Arelion-Ribbon* at your Microsoft® Excel instance.



The image above shows the last step of the license tool wizard, which shows you the state your license. In the example above the installed license is valid until 2014-09-24. After that date the Arelion License Tool will show, that the license is no longer valid. You can open *Arelion Room Planner*, but you are no longer allowed to run optimizations.

## 6.3 Licensing procedure after trial

The optimizer only runs, if a valid, not expired license is provided. If your trial license is out of date, the license dialog will show you more information how to get a new license.

## 7 About Arelion

**Arelion GmbH**, located in Pasching near Linz, Austria, develops and sells the **Arelion Optimization Core** that solves **quantitative optimization problems** for supply chain management tasks and other areas of industry.

Our customers benefit from our technology by **improved efficiency** in production, logistics, transportation, warehousing and duty roster planning.

At the heart of the technology (**Arelion Optimization Core**, short: AOC) is an evolutionary optimization method that is capable of **swiftly solving complex problems** to an extremely **high standard**, unlike other established approaches. Arelion's software is **particularly suited** for applications with continuously changing boundary conditions typically encountered in **dynamic environments**.

Arelion's technology originates from a **long-term research cooperation** between the **Johannes Kepler University Linz** and **Siemens Corporate Technology** in Munich. The aim of the collaboration is to develop a new kind of optimization software which eliminates weaknesses of common tools. The Arelion Optimization Core can solve complex optimization problems in the shortest possible time.

Visit our Website (<http://www.arelion.com>) or contact our sales team ([sales@arelion.com](mailto:sales@arelion.com)) to find out what we can do for you.

## 8 Credits

Microsoft, Excel, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.