**SIM WALK VERSION 4.0**

**Quick Start Guide**

**SimWalk** is a powerful simulation software to assure pedestrian security and walkability in public transport, urban planning and evacuation.

**Mastering Pedestrian Flows**

We have a passion for people on the move

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ABSTRACT

This Quick Start Guide shows in a short overview how to run the demo projects included in SimWalk Demo and how to view and analyse the simulation results. This Quick Start Guide is intended to lead the user quickly into the main functionalities and possibilities of SimWalk Pedestrian Simulation. For more detailed information see the SimWalk User Guide.

Note: If you first want to get an overview of the simulation data in the demo project and see the powerful features of SimWalk you can go to chapter 2 and view the demo movie.

1. Run the demo project

1. After a successful setup, start SimWalk main program by double-clicking the desktop icon or selecting Start/Programs/SimWalk 4.0.

2. The main window opens and the program copyright and version info are shown.
The Display window opens, showing the architectural drawing. On the right side, the Legend panel displays two levels, 'Concourse' and 'Station' and additional information regarding the architecture (drawing name, width, height, and number of levels).
**Hint:** If you don't like the small blue icons (introduced in version 4.0), just rename the 'Icons' directory in the SimWalk data folder (e.g. 'Icons_off').

Press the [Info] button to get more information about the active level.

In the 'Select a task' menu choose the task 'Run a new simulation'.
Note: Some items may be disabled depending on the features of your license.

6 The Display and Simulation windows open.

7 In the 'Select a mode' menu of the Display, choose 'Display mode'.

8 Press the [Start] button to run the simulation.

9 SimWalk starts the simulation process. After creating the levels, objects, and agents and building the potential fields, Simulation and Display windows allow choosing different display modes and levels on two independent screens.

Tip: If you have a dual-head video card and a second monitor, you may draw the Simulation window on the second monitor (if enabled in the Options).
A Main tool bar - Select and control the simulation
B Display tool bar - Select and control the presentation
C Display legend panel - Show and control the visual elements
D Display status bar - Provide information about the layout
E Messages window - Show information, warnings, and error messages
F Status window - Provide information about the agents status
G Main status bar - Provide information about the simulation run

A1 Use the control buttons to [Pause], [Step], [Continue], [Stop], or [Skip] the simulation run.

A2 Selecting [Settings] drop-down button, you can show or hide information panels and auxiliary windows.
A3 You may consider tracking system and simulation information like processor load, memory usage, and process and security status.

A4 Press the [Hazard control] button to get an overview of all manual and time controlled hazards currently defined in the project.

B1 Change the Display mode as you like.
**Hint:** Some items may be disabled depending on the settings in the Configuration.

**B2** Select 'Max density' or 'Mean density' mode to show a density map (P/m², m²/P, P/yd², or ft²/P) according to Configuration settings. Pay attention to density cell information, displayed in the Legend panel, regarding the color scheme in use. In the figure below the cell color corresponds to the current density in agents per square meter.

Select any density cell with a left mouse button click to show the density cell properties.

**B3** Select 'Spatial utilisation' mode to show a load map according to Configuration settings. Pay attention to the load cell information, displayed in the Legend panel, regarding the color scheme in use. Select any load cell with the left mouse button and click to show the load cell properties.
Select any load cell with a left mouse button click to show the load cell properties.

**B4** Select 'Speed loss' mode to show a speed map according to Configuration settings. Pay attention to the speed loss information, displayed in the Legend panel, regarding the color scheme in use. In the figure below the cell color corresponds to the percental speed loss in relation to the desired agents walking speed.

Select any speed cell with a left mouse button click to show the speed cell properties.
Select 'Agents trails' mode to show a trajectory map according to Configuration settings. Pay attention to the trail information, displayed in the Legend panel, regarding the color scheme in use. In the figure below the trail color corresponds to the last waypoint (Exit).

Select any trail with a left mouse button click to show the agent properties. The current position of the agent is marked by a small yellow hair cross while the properties are updated in the info window.

**Tip:** See appendix D for the meaning of agent status.

Select 'Agents flow' mode to show an agents map according to Configuration settings. Pay attention to agent information, displayed in the Legend panel, for the color scheme in use. In the figure below the agent color corresponds to the current walking speed.
Select any agent or vehicle with a left mouse button click to show the agent or vehicle properties, respectively. The current position of the agent or vehicle is marked by a small yellow hair cross while the properties are updated in the info window.

Tip: Select the menu item 'Locate position...' or double-click somewhere into the Display to locate either a point by its X/Y-coordinates or an agent by its number.

Tip: See appendix D and E for the meaning of agent and vehicle status.

B7 Display tool bar also allows changing the active level. The selected level will be shown and activated. Only the active level allows selecting agents, trails, cells, vehicles and other objects.

B8 Use tool buttons to [Zoom] or [Fit] the drawing or change the view to [Isometric] or [Perspective]. Use [+/-] spin buttons to set the drawing zoom (in %) and the viewing angle (in °) as desired.

Tip: Double-click into the zoom or angle indicator will restore the last value.

Note: The zoom will be adjusted automatically to fit the drawing (if enabled in the Options).
In the figure below agent symbols (some accessory equipped) with an isometric view of 30° to both levels are shown.

B9 Use tool buttons to [Zoom to area] of interest by dragging the left mouse button to see more details,

or [Measure distance] within the drawing using the tapeline tool.
Alternatively, use [+/-] spin buttons to zoom in or out the drawing by steps of 10%. The current zoom factor is shown as a percentage in relation to the drawing dimensions.

Click with the right mouse button into the drawing or the zoom indicator to pop-up a menu with zoom, printer, locator, and options items.

Press [Rulers], [Grid], [Background], [Images], [Timeline], and [Legend] buttons to show or hide the corresponding visual elements. Show or hide line and area counter(s) in the counter drop-down menu by selecting the appertaining checkboxes.
B13 Use [Chart] button to show or hide the counter chart. Use left mouse button to move or resize the chart, and the right mouse button to open the pop-up menu for various settings relevant for presentation and counter allocation.

B14 Use [Timer] button to display run pass number and time of simulation run.
**B15** Use left mouse button to move or resize the timer and the right mouse button to open the pop-up menu for various settings relevant for presentation.

**B16** Press [Display text] button to enter optional remarks indicated in pictures or movies. Use left mouse button to move or resize the text label, and the right mouse button to open the pop-up menu for various settings relevant for presentation.
B17 Use tool buttons to [Make snapshot] or [Record video] of the simulation display. The pictures are saved in the preselected graphic format in the simulation run folder of the project and can be viewed later or used to make a movie (see chapter 2.21).

**Note:** Select GIF video format to make movie using the SimWalk Movie Maker and PNG to make true color AVI/MPEG movies (needs free 3rd-party video utilities).

**Remark:** The [Record video] button is only available in the Simulation display.

B18 Press [Print] button to make a hardcopy of the currently seen display.

B19 Right-click into the drawing or the zoom indicator to select and setup the desired printer.
C1 The color scheme is shown according to Display mode and Configuration settings for:

- Agents speed (m/s or ft/s)
- Speed loss (%)
- Spatial utilisation (Agents rel. to load reference)
- Density (P/m² or P/yd²)
- Space (m²/P or ft²/P).

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<th>Color</th>
<th>%</th>
<th>Color</th>
<th>Agents</th>
<th>Color</th>
<th>P/m²</th>
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C2 Show or hide levels, objects, and agent groups by clicking the appertaining checkboxes shown in the Display's Legend panel on the right side. The Legend panel can be set on or off in the Settings drop-down menu or by pressing the [Close legend] button.
In the Display status bar, the current level number, drawing dimensions and unit (m or yd), cursor position, project and level name are shown. The timeline on top is a graphical representation of the runtime and the estimated duration. The timeline can be set on or off in the Settings drop-down menu or by pressing the [Close timeline] button. During a simulation, the timeline pointer indicates the current runtime whereas the scale marking is adjusted according to the estimated end of the simulation. If Formations are defined, they
are shown as orange boxes marking the arrival and departure times (SimWalk Transport and Airport only). Small circles indicate Hazard events (if defined).

**E1** In the Messages window, general information, warnings, status and error messages are shown. This window can be set on or off in the Settings drop-down menu or by pressing the [Close messages] button.

**Tip:** If an error message contains either an X/Y-coordinate or an agent number, you can double-click the appropriate line to locate that point in the Display.

**E1** In the Status window all pending, active, moved, waiting, or done agents as well as agent groups with the same waypoint and their average speed (m/s or ft/s) are shown. Right-click into the table to pop-up a menu with aligning, clipboard, export, and table settings items. This window can be set on or off in the Settings drop-down menu or by pressing the [Close status] button.
G1 In the main Status bar, actual date and time, real time, run pass and time, progress in % agents done, run pass name and currently used agents plan are shown.

After the simulation has terminated, the Completion dialog appears where you may fill in various information about the simulation run. Rename the simulation run to ‘Test Run 2’ and enter an optional project description, then press [Save] button to save it in the project folder. Press [Discard] if you don't want to save the simulation data.

If the checkbox 'Show simulation report' is set, a simulation summary is shown in the SimWalk Document Reader.
### SimWalk Simulation Report

**Project Information**

- **Project name:** Demo_Airport  
- **Organisation:** Savannah Simulations AG  
- **Agents plan:** plan_00.swt  
- **Project drawing:** Airport.swt  
- **Drawing width:** 120.0 m  
- **Description:** Test Run for User Manual

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**Simulation Summary**

- **Start time:** 16:02:55  
- **End time:** 16:13:31  
- **Real time:** 00:10:35.00  
- **Run time:** 00:16:18  
- **Total agents:** 1061  
- **Total waypoints:** 25  
- **Run passes:** 1  
- **Run steps:** 1958
2. View the simulation results

1. After having saved a simulation run, collected data can be viewed and analysed. In the 'Select a task' menu choose task 'View simulation results'.

2. In the 'Select a run' menu...

...choose the run 'TestRun01'.

3. In the 'Select a file' menu...

...choose the file 'DemoMovie'.
The SimWalk Viewer opens and the movie is loading and then playing. Use the control buttons to [Pause], [Next], [Stop] and [Play] the movie. Use the [Zoom] and [Speed] buttons to change the presentation.

Repeat step 3 and choose file 'Density map'.
6. In the 'Select a pass' menu choose the pass 'Run pass 1'.

7. The density map opens in the Display window. You may select actual, maximum, or mean density mode, enter a time range and then press the [Density map] button to refresh the density map.

   **Hint:** The data processing may take several seconds before the density map is updated.

8. Repeat step 3 and choose the file 'Database'.

The SimWalk Data Analyser opens and shows the configuration table. Select any mode and table of your interest.

Tip: See appendix D and E for the meaning of agent and vehicle status.

Open Options drop-down menu and select item 'Export table' to save the database table as an Excel or text file. You also may select other items for various settings and data manipulations. In the mode 'Database tables', you can open the 'Select table' menu to choose the item 'SQL query'. This enables you to perform a predefined or self-defined SQL query on the database table(s).
Repeat step 1 and choose task 'View simulation statistics'.

In the 'Select a run' menu...
...choose the run 'TestRun01'.

In the 'Select a mode' menu...

...choose mode 'Agents speeds'.

The SimWalk Data Analyser opens and shows the 'Agents speeds' chart. Use the Options drop-down menu for various settings and data manipulations. Repeat step 13 to show other statistical presentations of the collected simulation data.
Repeat step 1 and choose task 'Run an existing simulation'.

In the 'Select a run' menu...

...choose the run 'TestRun01'.
Before starting the simulation run, you may open the Settings drop-down menu and choose 'Configuration' to configure and adapt various simulation parameters of the project.  
**Tip:** See appendix A for details of the Configuration settings.

Choose the 'Options' item to set your personal 'look & feel'.  
**Tip:** See appendix B for details of the Options settings.
19. Select the desired display mode and press [Start] button to re-run the simulation.

20. Repeat step 1 and choose task 'Replay simulation run'. Then repeat steps 16 to 19 to run existing simulation pass with the collected data from the database.
Repeat step 1 and choose task 'Make simulation movie' to join recorded video frames to a SimWalk movie.

Video window opens. In the 'Select a run' menu,
choose 'TestRun01'.

Select a video frame in the list to view the picture. If needed, use tool button to [Delete] selected frame(s). After setting a frame delay time [ms] and entering a name, start video creation by clicking the [Create video] button.