SIMbox Version 5.5 Release Notes

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Version Statement

SimiGon is proud to release SIMbox version 5.5.

This version continues to focus on creating a quintessential solution for organizations seeking to increase Operational Readiness (OR) and decrease costs.

SIMIGON

1. What's New in Version 5.5

I'm proud to announce the release of version 5.5. This version introduces new capabilities to help our SIMCOs and Users around the world to improve throughput, reduce costs, save invested resources, empower their tools and renew methodologies, all aimed at quicker, high quality results. SIMbox can help accomplishes those goals and more with its new 5.5 version, by lowering the complexity of development, setting new performance standards and removing technological barriers.

I trust our users will find this new version a natural evolvement over the previous versions of SIMbox as it enables a superior and more mature development experience.

I invite you all to visit our constantly improving, rich, functional and informative wiki website (wiki.simigon.com). The SIMbox Wiki provides detailed documentation about the SDK capabilities, best practices and more.

As SimiGon always looks to improve our services to our loyal community members and customers I would like to better understand your needs and challenges with regards to SIMbox through our ongoing communication, I am eager to learn more about the type of applications you develop or plan to develop, and about the business scenarios you were able to solve.

Of course we want to hear what you would like to see next as we evolve our product. If you feel there is anything we can do to improve the service, please, take a moment to let us know about it.

If you encountered development challenges using SIMbox, please feel free to approach us with any questions, challenges or doubts you may have. My development team and I are committed to "walk you through" to a solution. Please do not hesitate to contact me so that together, we can find the best possible approach and/or practice.

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2. New Graphic Engine Features

Version 5.5 introduces new terrain features that provide flexibility and content to the simulations. These features include more realistic volumetric clouds, new mist in simulations, new Geographic Information Systems and an improvement in the performance of large terrains.

2.1. Weather Systems

The simulation supports new features that increase the overall effectiveness of the simulation experience.

2.1.1. New Volumetric Clouds

Version 5.5 supports a new implementation for volumetric clouds. The new cloud system provides full 8/8 coverage over the entire scenario area. The clouds are visually more realistic both when viewed from afar and from close by. These clouds are much less CPU and less GPU intensive as well as requiring less memory when compared to previous implementations.

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2.1.2. Mist in Simulation

Version 5.5 supports mist in the simulation. The graphic engine features a new implementation of mist (both multipass and non-multipass). This feature is both better more realistic and has better performance than the previous implementation of mist.

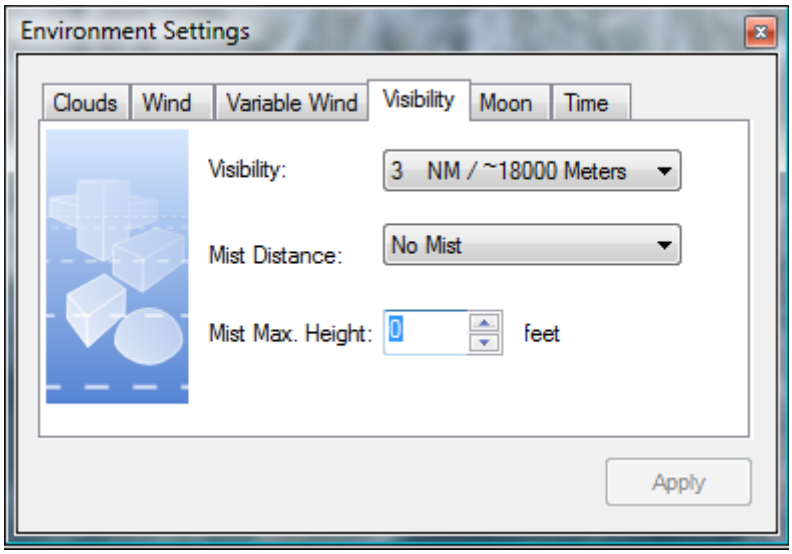

Figure 1. The Environmental Settings - Visibility Tab Showing the Mist Option

2.2. Real Time Shader System

Version 5.5 provides an enhanced Real Time shader system as an infrastructure system that replaces the graphics card 'Fixed Pipeline' approach and allows for easier integration of new shaders into the system.

This infrastructure allows us to integrate the following features:

- **Hardware Animation**
  Calculations of skeleton effects on an entity are performed in the graphic card instead on the CPU. This feature greatly improves performance.
- **Improved Dynamic Lights**
  The graphic engine can now perform calculations for lighting on a per pixel for a limited number of lights. This feature allows for better visuals in the simulation. One example of the application of this feature is the simulation of an aircraft's landing lights lighting up a runway during takeoff and landing.
- **Improved Visibility Implementation**
  The graphic engine now supports a new implementation of mist (both multipass and non-multipass). This feature provides better performance than the previous implementation of mist.

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2.3. New Terrain Features

2.3.1. Geographic Information Systems Maps

The Geographic Information Systems (GIS) map is a new 2D map introduced in this version, providing a new alternative to the existing 2D map. The GIS 2D map allows the user or developer the option to have multiple GIS raster and vector layers.

This version intergrated a GIS raster engine into the graphic engine. The graphic engine supports all standard vector and raster formats without requiring changes to the native format.

The SIMbox installation provides a default 2D map of Las Vegas that displays GIS layers on the map to demonstrate the feature. You can control the display of GIS data through the GIS map window.

Figure 2. The 2D Map Showing Geographic Information Systems Data

2.3.2. Improved Support for Large Terrains

Version 5.5 provides a visual improvement when running the simulation with a large terrain. The improvement includes an internal change in the graphic engine of the 'Real' type precision from float to double. In addition, the view matrix per rendering window is now relative to camera position.

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3. New Features in Simulation

3.1. Playback Segmentation

Version 5.5 supports playback segmentation from the feedback report. This feature allows an instructor to take a small section of the recorded simulation session for the purpose of feedback. You can define playback segments while viewing the playback file.

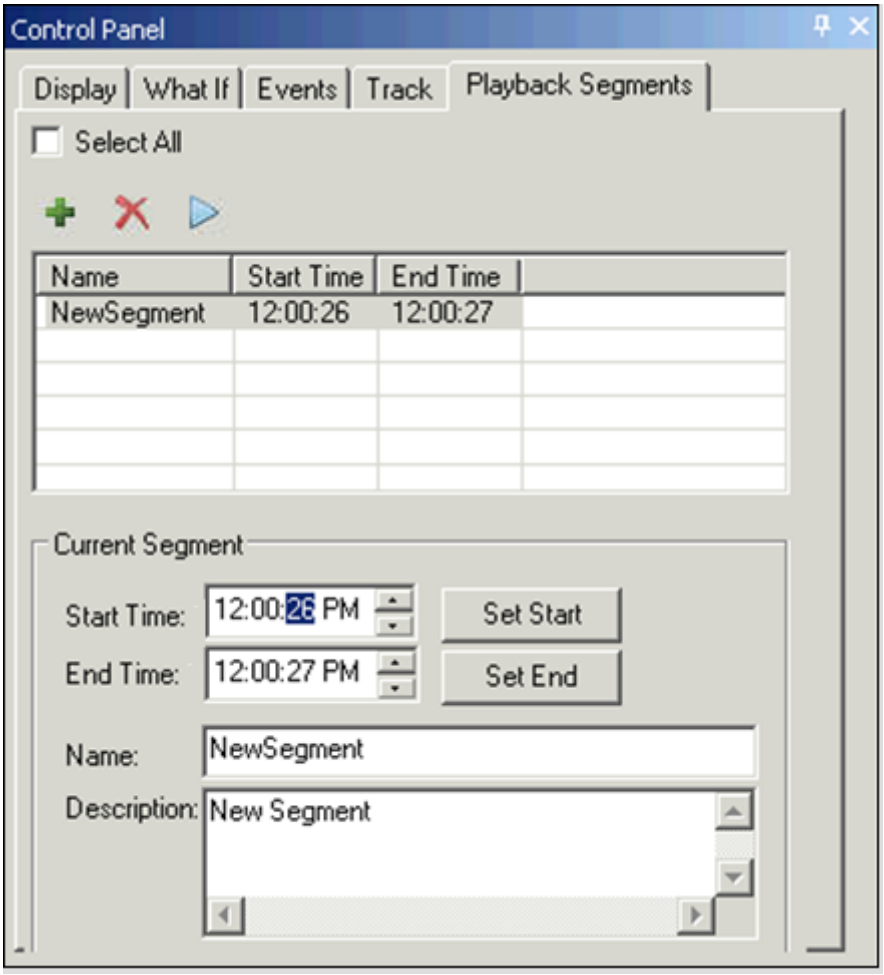

Figure 3. The Control Panel Showing the Playback Segments Tab

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The new playback segmentation are available from the feedback report.

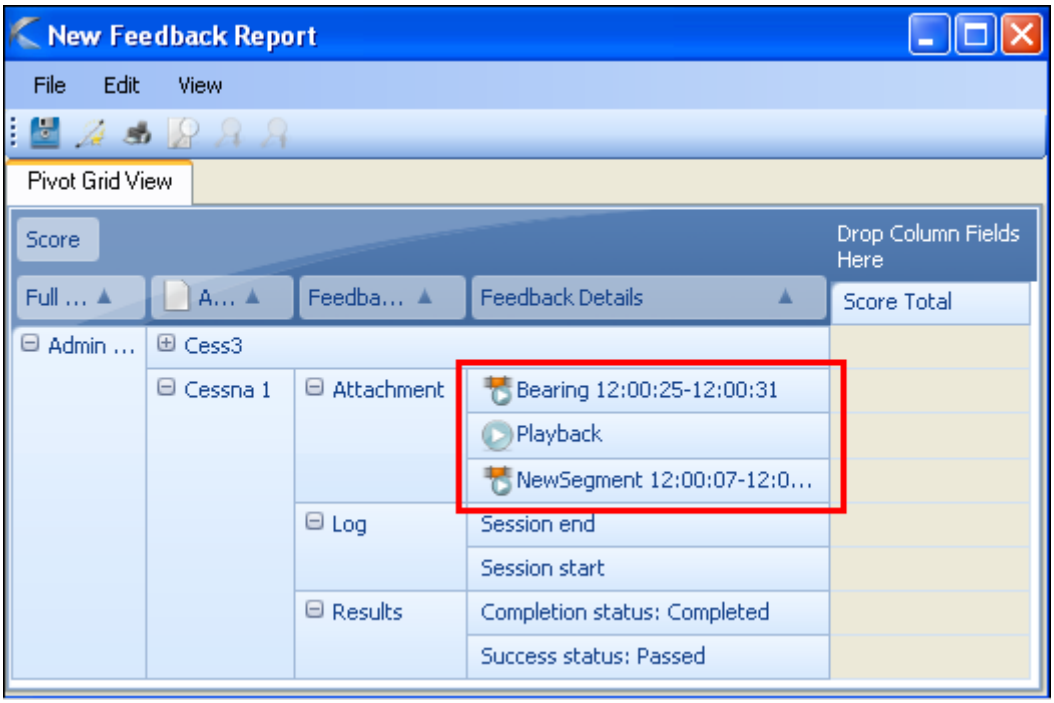

Figure 4. The Feedback Report Showing the New Playback Segments

From the report you have the option of running a playback segment and saving a playback segment from that segment. You can also delete both the original playback file and/or the new playback segments.

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3.2. Extension Collections

Version 5.5 introduces the ability to control extension collections for improved configuration management tasks while deploying simulation packages. There are two areas you can manipulate the extension collections; at the machine level or at the session level.

For the machine level one can modify the preference file to set the default extension collections from the installation, so that the any session on the local machine will use these with specific default settings, this can also be modified manually from the Tools->Option dialog.

At the session level, these settings can be set from the session properties dialog, setting the extension collection for the session will affect only the specific session.

3.2.1. Extension Collections Values Per Machine

Version 5.5 provides control over the extension collections that are used in the simulation at the machine level.

Extension Collections are add-ons that control how a simulation will behave. You can modify the session-level extension collection for each of the available simulation commands (for example, Go, Create a Session and Playback). This can be achieved from the Tools->Options ->Launch Parameters dialog.

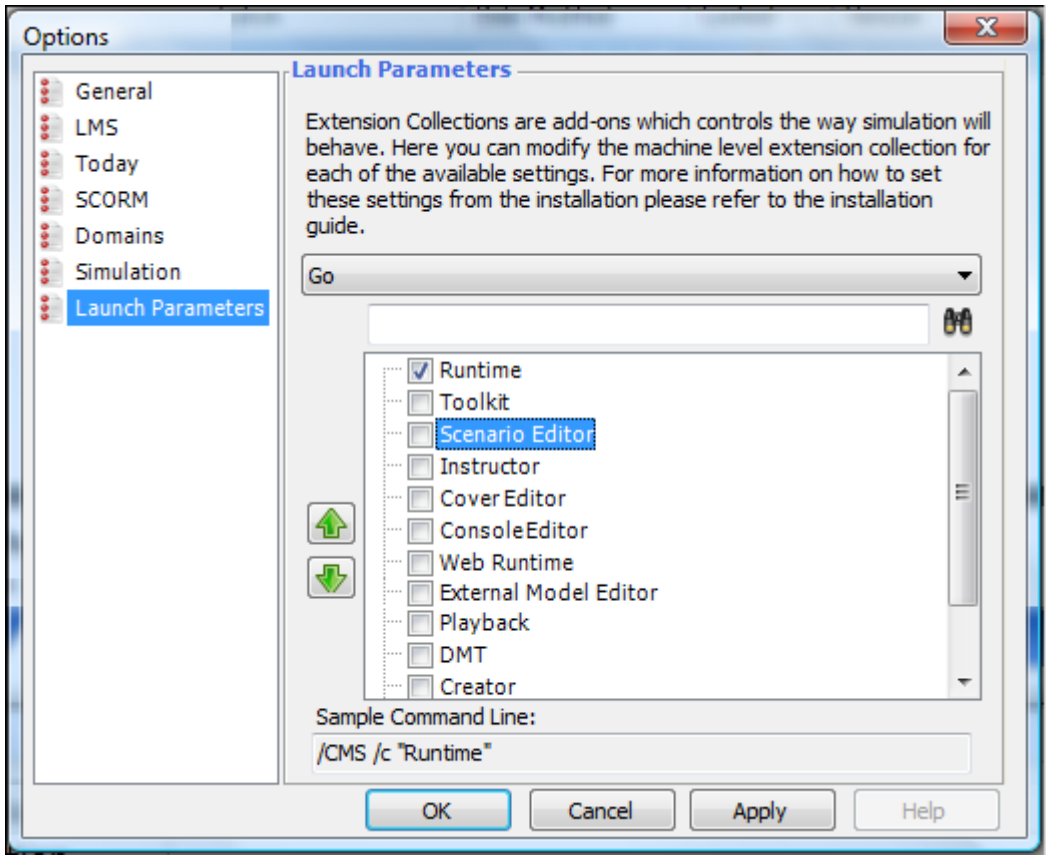

Figure 5. The Options - Launch Parameters Tab Showing the Extension Collections

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3.2.2. Extension Collections Values Per Session

Version 5.5 provides control over the extension collections that are used in the simulation. In addition, every session can specify its own extension collection values.

You can specify the same list of extensions for each command at the session level (session property dialog).

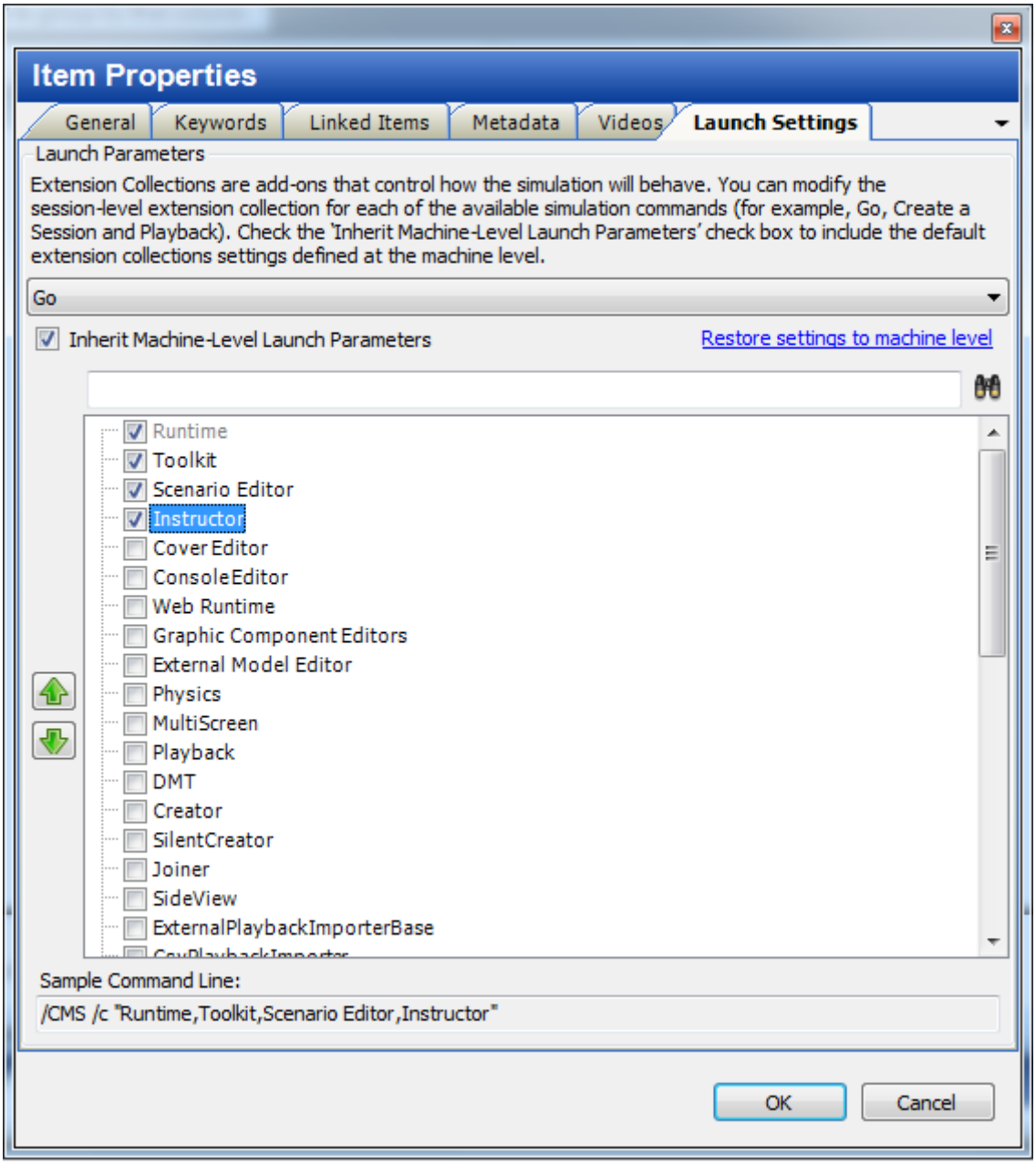

Figure 6. The Item Properties - Launch Settings Showing the Extension Collections

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3.3. Improvements in DMT

A lot of effort was invested with the Instructor Operational Station (IOS) to provide improved stability and better performance to allow instructors join distributed training sessions.

3.3.1. DMT - Filter User Station

Version 5.5 provides the ability to filter user input by station or by user input. This feature adds to the Instructor Operator Station (IOS) capabilities for Distributed Mission Training (DMT) in SIMbox.

This feature enables you to determine which user input can be invoked from which station. Take for example, two trainees in a submarine, where you can limit the trainee on the helm from operating the sonar.

The User Input Settings are set in the SIMbox Toolkit. You can define the filter by station.

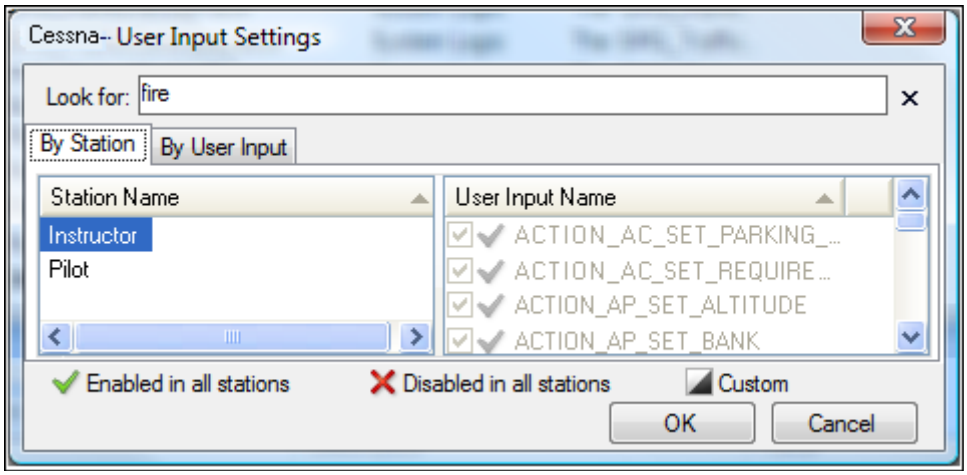

Figure 7. The User Input Settings - By Station Tab

Or you can define the filter by user input.

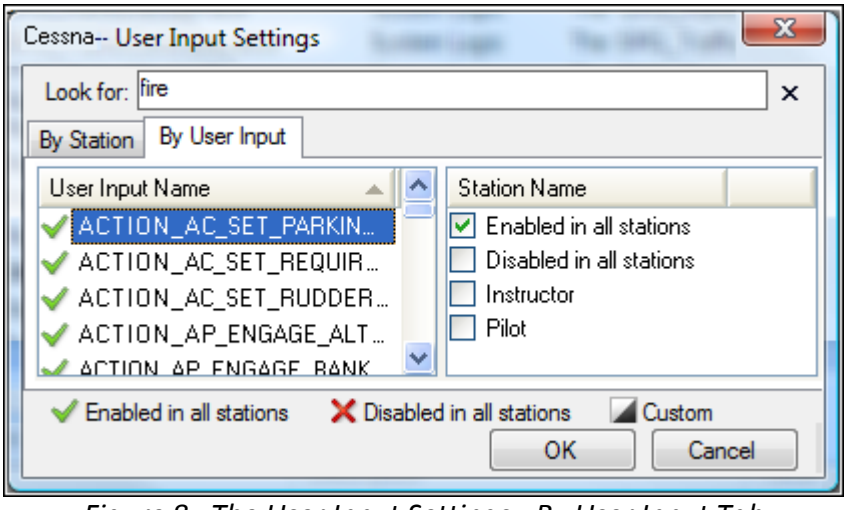

Figure 8. The User Input Settings - By User Input Tab

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3.4. Variable Wind in Simulation

Version 5.5 supports variable wind in the simulation. The Environmental Settings allow you to define the maximum deviation in wind speed and wind direction, as well as the gust interval in seconds.

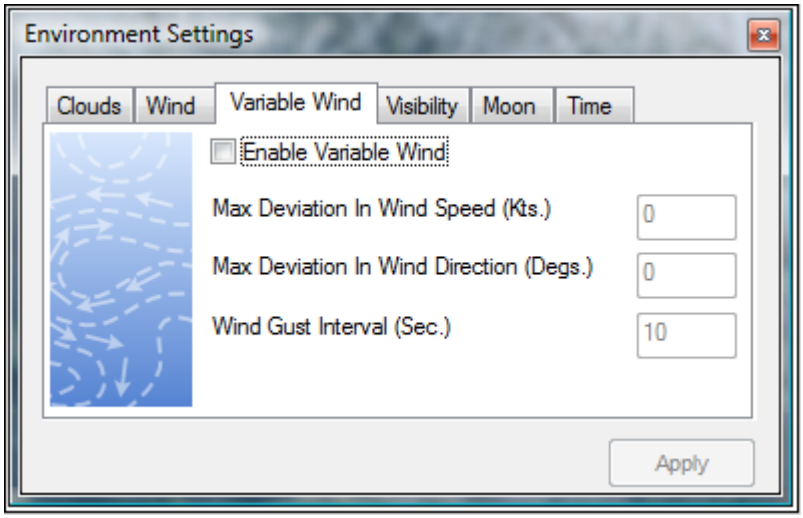

Figure 9. The Environmental Settings - Variable Wind Tab

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3.5. SDK Wizard Improvements

3.5.1. Action Defined as User Input

A new wizard features the ability to define an action as a user input when designing the component. In previous versions, the developer had to define this action through the SIMbox Toolkit after analyzing the component.

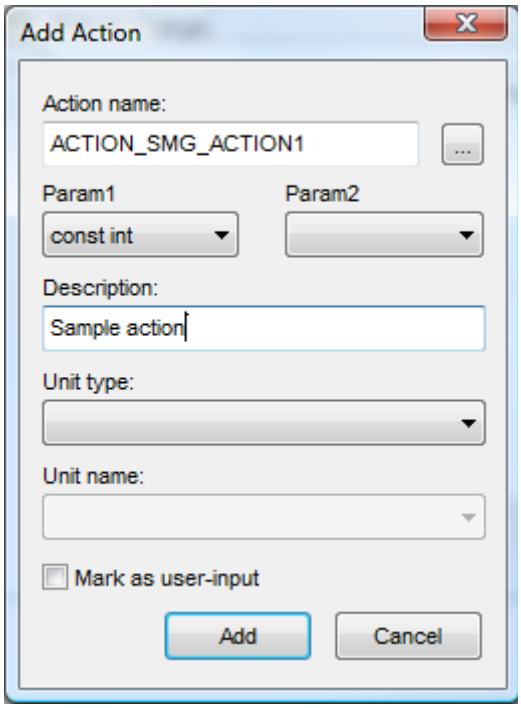

Figure 10. The Add Action Dialog

The Add Action dialog provides a checkbox to flag the action as a user input.

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3.5.2. Attribute Visibility and System Affiliation

The wizard provides the ability to define the visibility of an attribute and assign it to a system when designing the component. In previous versions, the developer had to define this action through the SIMbox Toolkit after analyzing the component. These values control the way the attributed is filtered in the Attribute Find dialog (show all tokens and the System drop-down field).

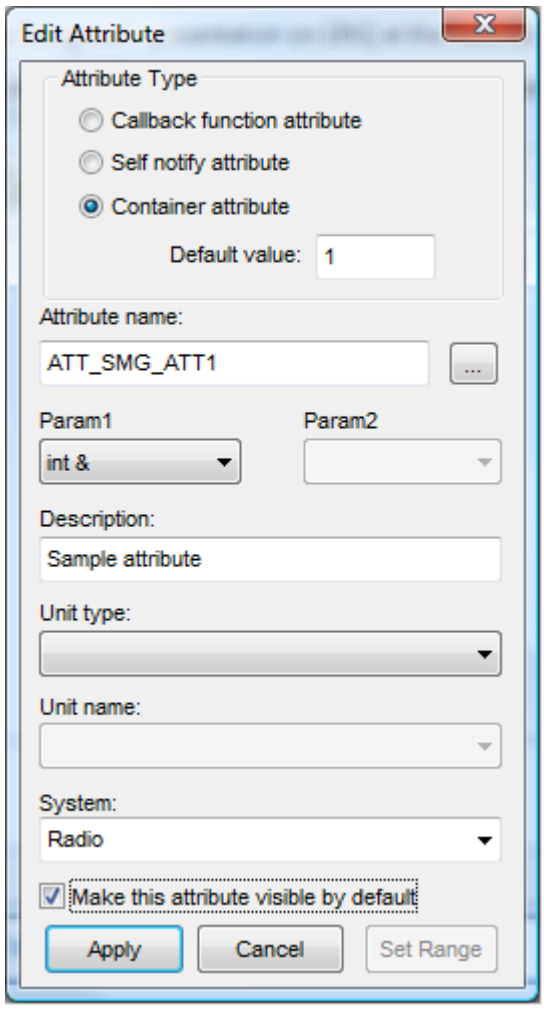

Figure 11. The Edit Attribute Dialog

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3.6. Operating System Support

SIMbox version 5.5 supports Windows 7 in both the 32-bit and 64-bit.

Figure 12. SIMbox Supports Windows 7

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