WASP3D

New Features and Enhancements Version 6

We're excited to unveil Wasp3D version 6, a milestone release driven by user feedback and performance enhancements. This version is a testament to our commitment to delivering an exceptional user experience while pushing the boundaries of graphics innovation in broadcasting.

Key Features and Enhancements:

- Revamped User Interface: We've overhauled the GUI across all applications, focusing on user feedback to streamline workflows and reduce the number of clicks required to perform tasks, enhancing productivity and usability.
- Wasp3D Template Licensing System: templates created within the Wasp3D system are securely locked to their respective license IDs. This means that templates can only be accessed by the system with the matching license ID, ensuring strict control and security over your creations. This enhancement ensures that organizations have tighter control over their templates within the Wasp3D system, preventing unauthorized access and safeguarding their intellectual property.
- Introduction of ImGui: With the introduction of ImGui, users now have greater flexibility when working with output engines and Designer viewport. allowing for seamless selection of windows and improved interaction within V-Set and Fluid App.
- DirectX12 Integration: Select components have been migrated to DirectX12, enhancing performance and leveraging the latest graphics technologies to deliver smoother and more responsive graphics rendering.
- Integration with Unreal Engine 5.3: Version 6 introduces integration with Unreal Engine 5.3, enabling users to leverage the latest features and capabilities of Unreal Engine for enhanced graphics production.
- New Product Names and Introduction of Fluid App: We've rebranded certain products and introduced the all-new Fluid App.
  Fluid App is a powerful tool designed for multi-window graphic production, offering advanced features that go beyond traditional Video Switcher capabilities. Fluid App provides users with dynamic window management capabilities, allowing windows to smoothly animate and snap to new layouts while preserving their configurations and names. During input changes, Fluid App automatically sources input names from a central data list, streamlining the production workflow and ensuring accurate information display. Additionally, users have the flexibility to configure the animation time between windows in Fluid App, giving them greater control over transitions and enhancing visual aesthetics during live broadcasts.
- A dedicated Designer application, called Fluid DVE App, has been developed with a focused set of features tailored for multi-window and simple graphics creation.
- Names of applications are changed.

Bug Fixes and Stability Improvements:

Version 6 includes numerous bug fixes and stability improvements, ensuring a more reliable and seamless user experience across all modules.

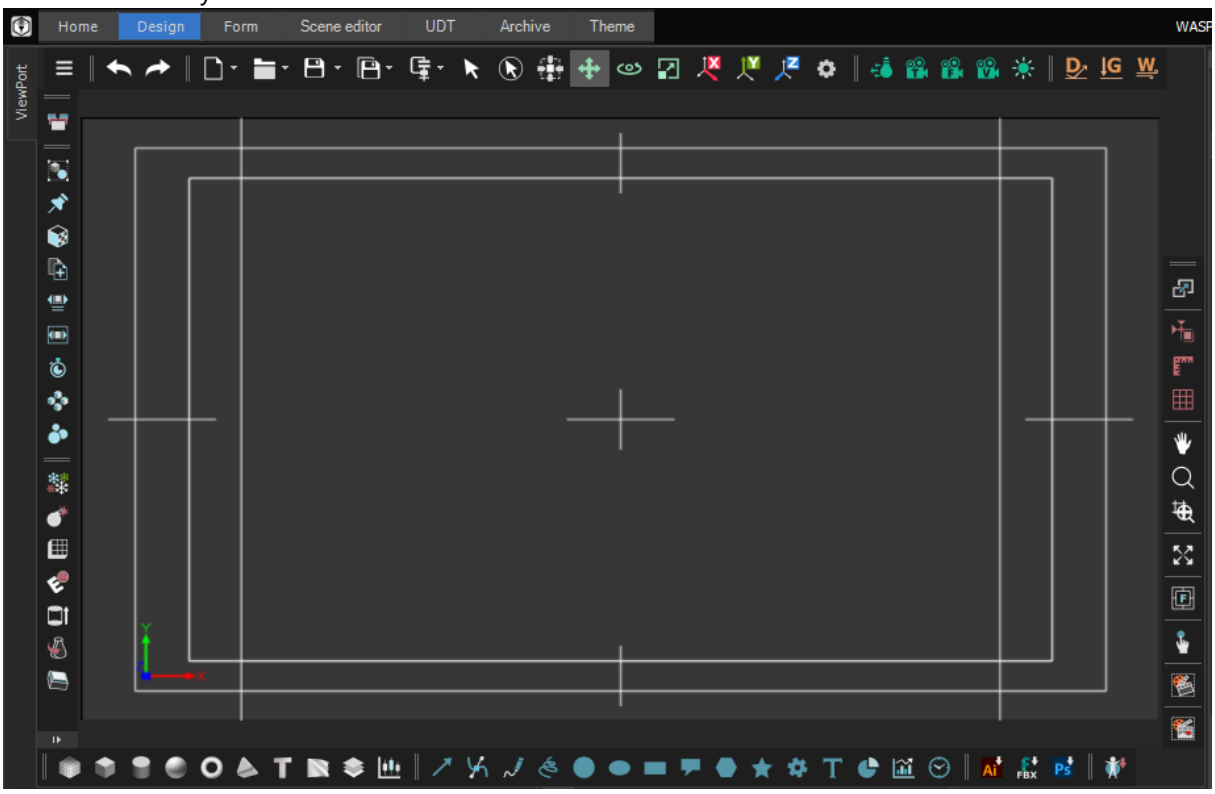
Feedback and Support:

We value your feedback! If you encounter any issues or have suggestions for future enhancements, please don't hesitate to reach out to our support team at support@beesys.com.

Thank you for choosing Wasp3D. We're committed to empowering you with powerful, intuitive, and innovative graphics solutions.

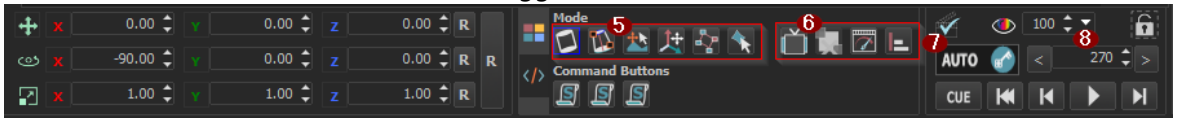
File & Interface

- Wasp3D Template Licensing System: templates created within the Wasp3D system are securely locked to their respective license IDs. This means that templates can only be accessed by the system with the matching license ID, ensuring strict control and security over your creations. This enhancement ensures that organizations have tighter control over their templates within the Wasp3D system, preventing unauthorized access and safeguarding their intellectual property.
- Ribbon tool bar has been removed and dedicated toolbars have been aligned along the viewport. User can save their own layouts to customize the look and feel and location of the toolbar.



- When you turn on the "Animate" button, it makes a red line appear around the viewport. This lets you see immediately whether animation is turned on or off. It's a visual cue to help you know the status of animation without needing to check any other settings.
- The Animator toolbar in the Designer is also redesigned. With the following changes:

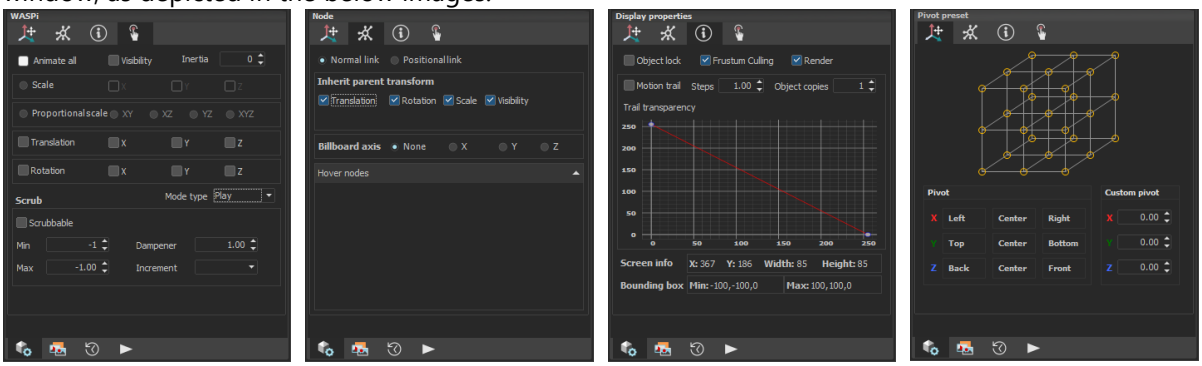
1. The default tab is now Color Swatch.
2. RGB and HSB color values, along with dedicated color sliders, are new additions.
3. The location of the Color Picker has been changed.
4. Hex color is now included in the Color Swatch control.
5. Modes have been relocated from the toggle mode above the Auto Button to the Buttons tab.



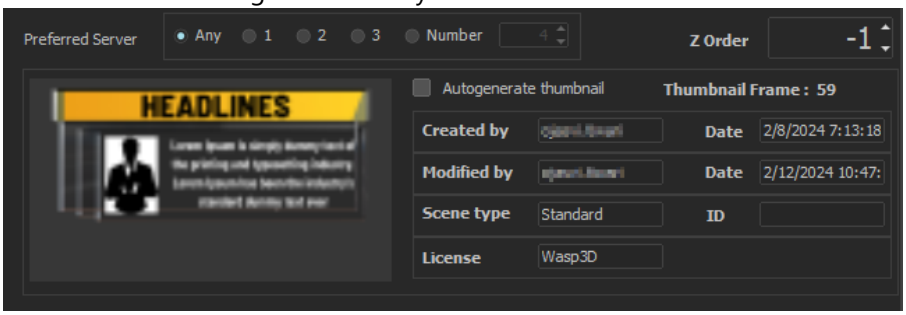
6. New buttons for Show Output, Clear Layout, Show Render Stats, and Align are added in the second tab.

7. A dedicated toggle button for rendering Scene Elements on/off is introduced.
8. Visibility Control now allows users to directly set the Opacity of an object, a feature previously only achievable through visibility keyframes in the Track View.

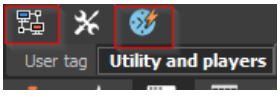
- Implemented dock panel in the Parameter Pool window.
- Removed the Node Tab and reorganized its panels into respective tabs at the bottom of the Parameter Pool window, as depicted in the below images.



- Metadata Tab Redesign in Hierarchy Window



  - Thumbnail Picture Box Size Increase: We've made the Thumbnail picture box larger for improved visibility and usability.
  - Auto-Generate Thumbnail Checkbox: A new checkbox, "Auto-Generate Thumbnail," has been added to the Metadata Tab. This feature provides you with the flexibility to choose how you want thumbnails to be created for your templates:
    - Automatic Generation: Select this option if you want the template thumbnail to be generated automatically based on the frame where the template is saved.
    - Manual Selection: Alternatively, you can double-click on the thumbnail to manually select the desired frame as the thumbnail for your template.
  - License option has been added to show the licensee of the original template.
- All color variables and parameters come with a color preview alongside their values. This improvement makes it easier to visualize and work with colors
- Hardware IO and Output tabs have been re-adjusted in the Drone Designer Preferences.
- Icons for Link and Lifetime add-ins are updated.

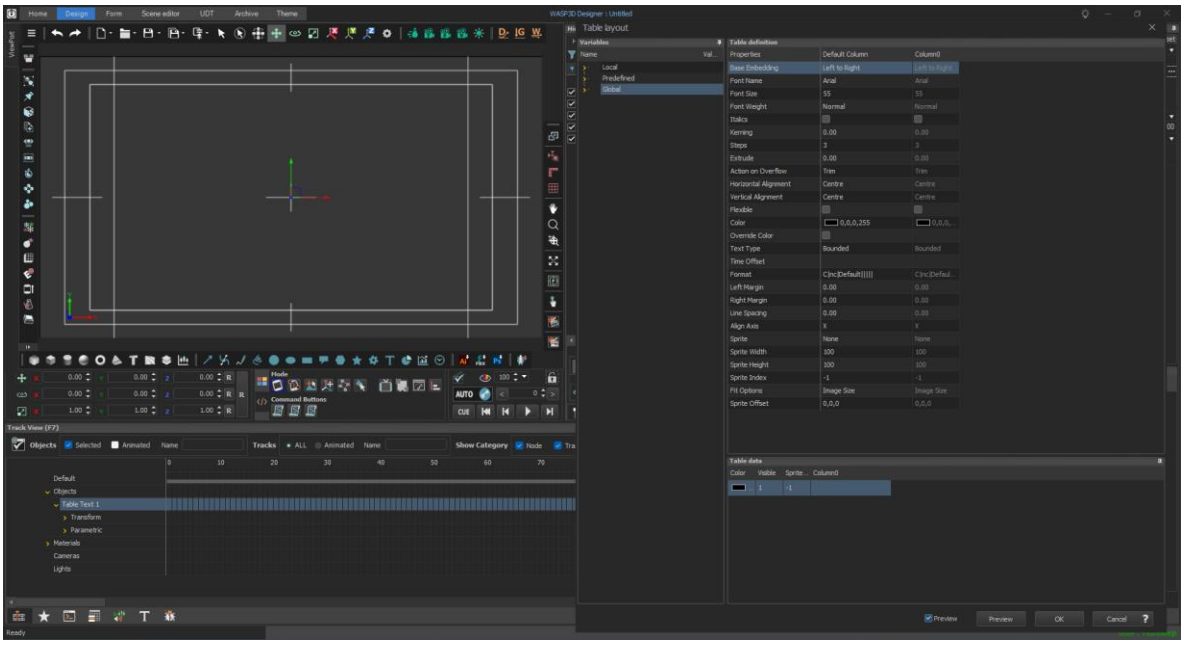


- Users can now move templates between folders in Designer's Template Pool. To do this, right-click on a template and select "copy." Then, navigate to the desired folder, right-click, and choose "paste."
- Style Templates are added in Designer to create Tickers, Bar and Pie scenes. These scenes are complete working scenes and connected to UDT as well. Users can use these styles and customize these templates for their use.
- Name of the Selected 3D Text is now displayed in the Title Bar of the Text Editor window.

- Click on the M button along the material name in the Hierarchy tab to switch to Material Pool Tab select the respective material in the Material Pool.
- Designer viewport is now presented using the ImGui Library. This has improved the rendering time of the scene when working in the designer.

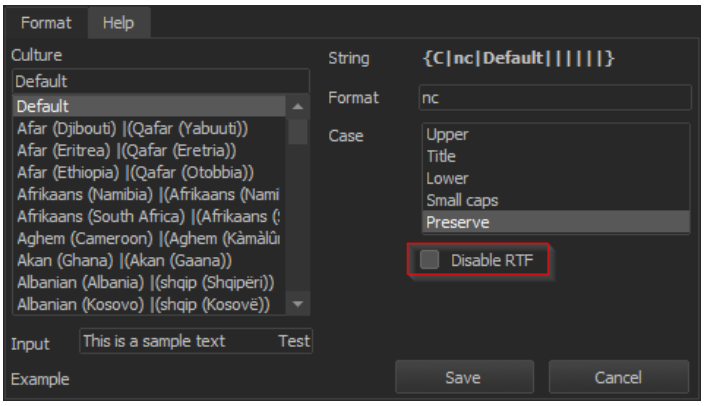
Objects & Property Sheet

- **Omni Light** is added. It works on all objects and materials in the scene and unlike Directional Light, user is not required to select the light in the Material Parameters. User can use up to 4 omni lights in a scene.
- **Light Probe** Users can define a cubic environment by adjusting the parameters of the Light Probe object. To enable reflections, designate the Light Probe as a Cubic Node within the Standard Material parameters, then activate local reflection by pressing the 'L' button alongside the Reflection Texture Type.
- **Intensity** parameter has been added to the **Directional Light**. This allows users to increase the light intensity of the directional light source.
- A new parameter called **Environment Reflection** added in the **Background** object. This feature allows you to apply the selected Cubic DDS type reflection texture as a global reflection for all objects with standard materials in your scene.
- We've streamlined object instancing by introducing the Instancing object and removing the Instancing parameter from individual objects.
  How it works:
  1. **Create the instancing Object** be pressing  icon in the Helper Objects Toolbar.
  2. **Apply Instancing:** In the parameters of the respective object, select the Instancing Object. This clones the object along the selected shape within the Instancing Object.
  3. **Select Target Shape:** Choose the desired shape in the Instancing object.
  4. Set the number of Clones required in the Total Instances and respective properties.
- **Tile**
  - Added a Global Texture Property, allowing users to assign textures to individual cells or to the entire tile as a single object.
  - Auto Preview option added in Tile object.
- **Table Text**
  - Added Dock Panel and Layout Save and Restore options in the Table Text.
  - The Table Text Window now opens above the Hierarchy and Parameters pool area, ensuring a clear view of the Viewport while making changes.



- Introduced a Preview button in the Table Text to display changes made to the Table Text Object in the viewport.
- Included a Sprite option in Table Text, enabling users to incorporate images along with Row or Column Data. Users can utilize a sprite-based image and assign an index in the Sprite Column to add the relevant image. For example, flag images displayed in the Table Text graphic are part of this feature. For more information and tutorials, please refer to the following link: [Tutorial Link].

- Added a "Disable RTF" option in the 3D Text Format window. This allows users to deactivate the Rich Text Format (RTF) feature from both 3D and 2D Text Objects.



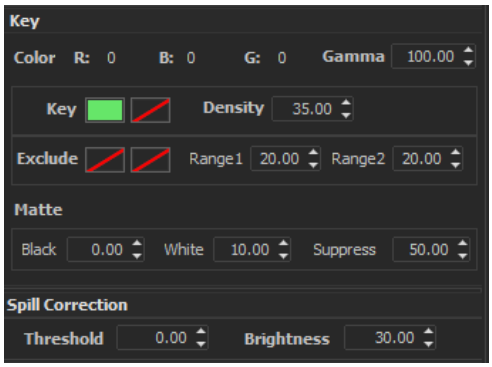
- User can now Extrude the outlines of the shape objects. The extrude object now has option to select Fill and Outline or both as the extruded object.
- Point and Point Size properties are removed from all Shape objects.
- Z-Depth sorting is implemented in Particle Object. This allows user to place particles in near depth. This is more visible when working with Sprite Texture with Particle Material.
- 'Tessellation' property in FBX will visible only for NURBS surface and hidden for others.

Material Editor

- Introduced a new feature called **Cubic Reflection Maps**, which allows you to use cubic area-based reflection maps for objects in your scene.
  How it works:
  - Define Cubic Area: You can specify a cubic area using either a Light Probe object or any cube-shaped object in your scene.
  - Set as Cubic Node: In the Parameters of the Standard Material, you can designate this cubic area as a Cubic Node.
  - Apply Reflection: By pressing 'L' next to the Reflection type texture, you can activate Local Reflection, ensuring that the Cubic Node area is used for reflections in the material. ‘

- Color Channel RGBA are added in Matte Material. This enables user to use Unreal Depth maps with Alpha Write ON and OFF.
- Gamma property is added to Matte Material. This will control the Gamma of the Unreal Texture when applied.
- Shade and Cull mode properties are added to Matte Material.
- Added a gloss property to the Standard Material. This property works with the Environment Map when applied to the Background object, as well as with a Gloss Texture map. Toggle Between Texture and Value. You can now press the ‘T’ icon to switch between the gloss texture and its numerical value. This gives you more control over how glossy your materials appear in your scenes.
- BlendAlpha property removed from Standard Material’s blending options.

- Chroma is reworked and some properties are renamed. The UI of the Chroma Material is also updated in Designer and Controller applications like V-Set app.
    - Changed the name "Threshold" to "Range".
    - Combined "Density Min" and "Density Max" into a single "Density".
    - Updated "Matte Min" to "Matte Black" and "Matte Max" to "Matte White".
    - Renamed "Spill" to "Spill Correction" and "Spill > Correction" to "Brightness".
    - Added a new setting called "Suppress" to reduce alpha after setting Black and White matte properties.

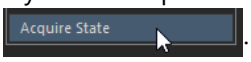


    - Made R, G, and B numeric text boxes read-only; now adjust colors using the Color Swatch/Color Dialog box.
    - Renamed "Power" as "Gamma" to control intensity in the final chroma area.

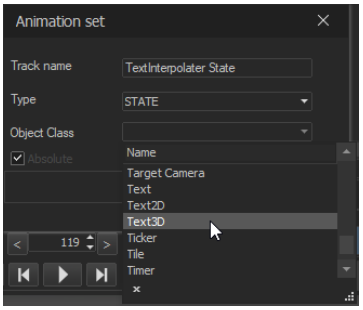
Texture Pool

- We've enhanced the Water Texture with three levels of waves, giving users more detailed and realistic water effects. Users can apply Normal Maps and adjust the scale to control the size of the water waves, allowing for customized appearances and desired visual effects.
- The user can now select multiple texture maps and control their UVW coordinates simultaneously. When textures of the same class are selected, parameters for the selected textures can be modified collectively.
- X & Y position parameters are removed from the Browser Texture.

Track view

- Added State Interpolator feature for the Node. Now, users can simply right-click in the Hierarchy Pool to capture the state of an object using the Acquire State Command 

. This action copies the interpolated values of the selected object and saves them in XML format. The copied values can then be stored as a State Interpolator based Animation Set, enabling users to animate an object for all its interpolator values from a single track. Users can acquire multiple states of an object and add as many keys as needed in the Animation Set track.



Actions, Events & Triggers

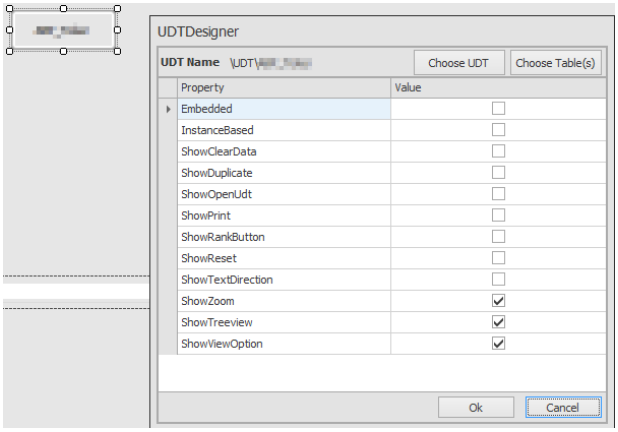
- Play Ticker Action is removed.
- Template, Playlist, Sting Client and Broadcast type triggers levels have been removed from the Raise Trigger action. User can use Communication add-in to raise triggers to multiple machines instead.
- The Code Editor tab is back in the Actions Window. This enables users to write scene editor code directly within the event or trigger, eliminating the need to switch to the Scene Editor tab.

Variable Sheet

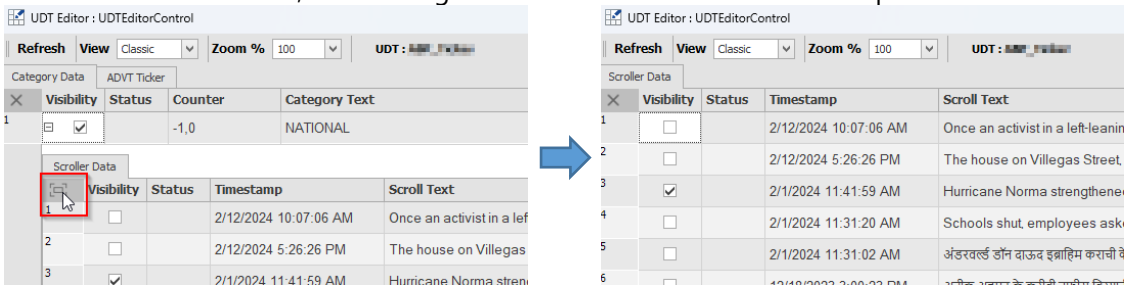
- Now, users can define names for the views created in the add-ins. This allows for better organization and easier identification of views when working with tables with different filters.
- A Variable to Enable or Disable Depth based MIP Maps has been provided in the Scene Graph Variables along with Depth Based MIP Multiplier to control the value of the MIP softness. Make sure the Generate MIP property is enabled for the respective textures for which the MIP is required to be generated.

UDT

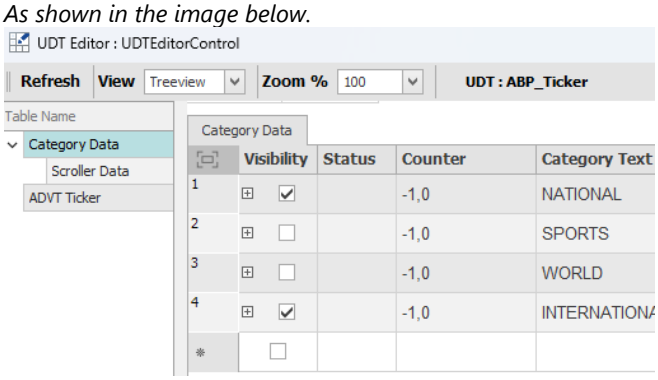
- The UDT interface has been revamped to facilitate faster and more focused data entry operations.
- Double-clicking on the UDT control in the form brings up UDT selection and parameter display options. Additionally, users can toggle checkboxes to display options in the UDT Toolbar during data entry in either embedded or Window mode.



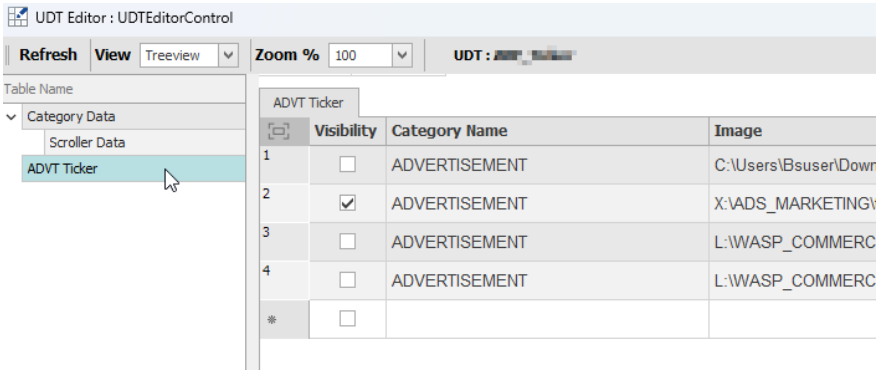
- Users now have the flexibility to choose between Tree View or Classic mode within the UDT parameters. By clicking on "Show View Options" in the UDT Toolbar or selecting "Show Tree View" in the UDT Designer window, users can switch between these modes.
    - Both Tree View and Classic mode feature a "Focus Zoom" functionality for child tables, allowing users to enlarge a specific table within the UDT window for focused data entry. Clicking the "Focus" button zooms in on the Scroller Data table, and clicking the cross button returns to the complete hierarchical view.



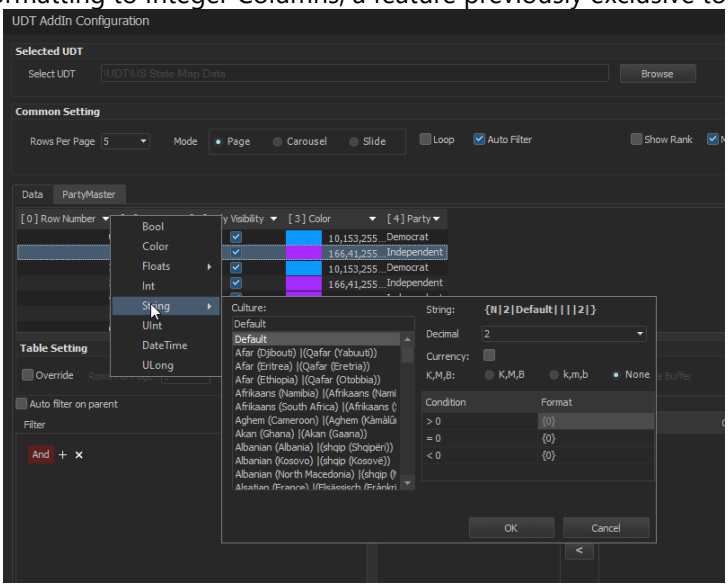
    - In Tree View, tables are presented on the left side of the UDT, enabling users to select the table they wish to work with. For instance, selecting the Category table prevents expanding the Scroller Data Table. To expand the hierarchy for data entry, users must select the Scroller Data Table and click the "+" button. *As shown in the image below.*



    - Classic mode displays all tables as tabs organized according to their hierarchy. In Tree View, both parent and individual tables are shown in the Table Name Column. Users can click on a respective table to open it in the display area.



- Users now can modify the data types of UDT columns directly from the UDT add-in. Additionally, they can apply string formatting to Integer Columns, a feature previously exclusive to Excel, JSON, and XML add-ins.

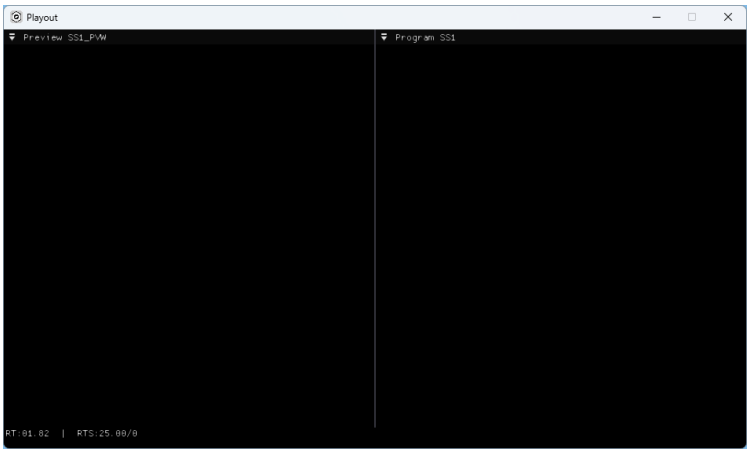


- Users can now add expressions for Child Tables for expressions applied in the Parent Table. In this case user can get results from the Child Table and get it displayed in the Parent Table. For e.g. There is a League Table of Teams, and user needs to get a sum of the all medals won by each team in the parent table. This can be done using the Expression in Parent Table to get Sum of all rows of the Gold, Silver and Bronze Medals respectively per column using expressions like this:

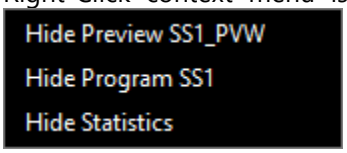
  `Parent (Parent.), Sum(Child.) , Sum(Child([<Relation Name>]).)` are the command syntax to use the parent and Child Tables for expressions.

Engine & Playout

- Aspect ratio of the Engine is changed from 1.77 to 1.7778. This has been done to make the ratio consistent with the Designer Application.
- ImGui Interface implemented in all Playout Engines.



- With update of Engine UI to ImGui, the option to Show Preview and Program using double click is provided as Right-Click context menu.
- Right-Click context menu is made available to work on various settings in the Engine Window.

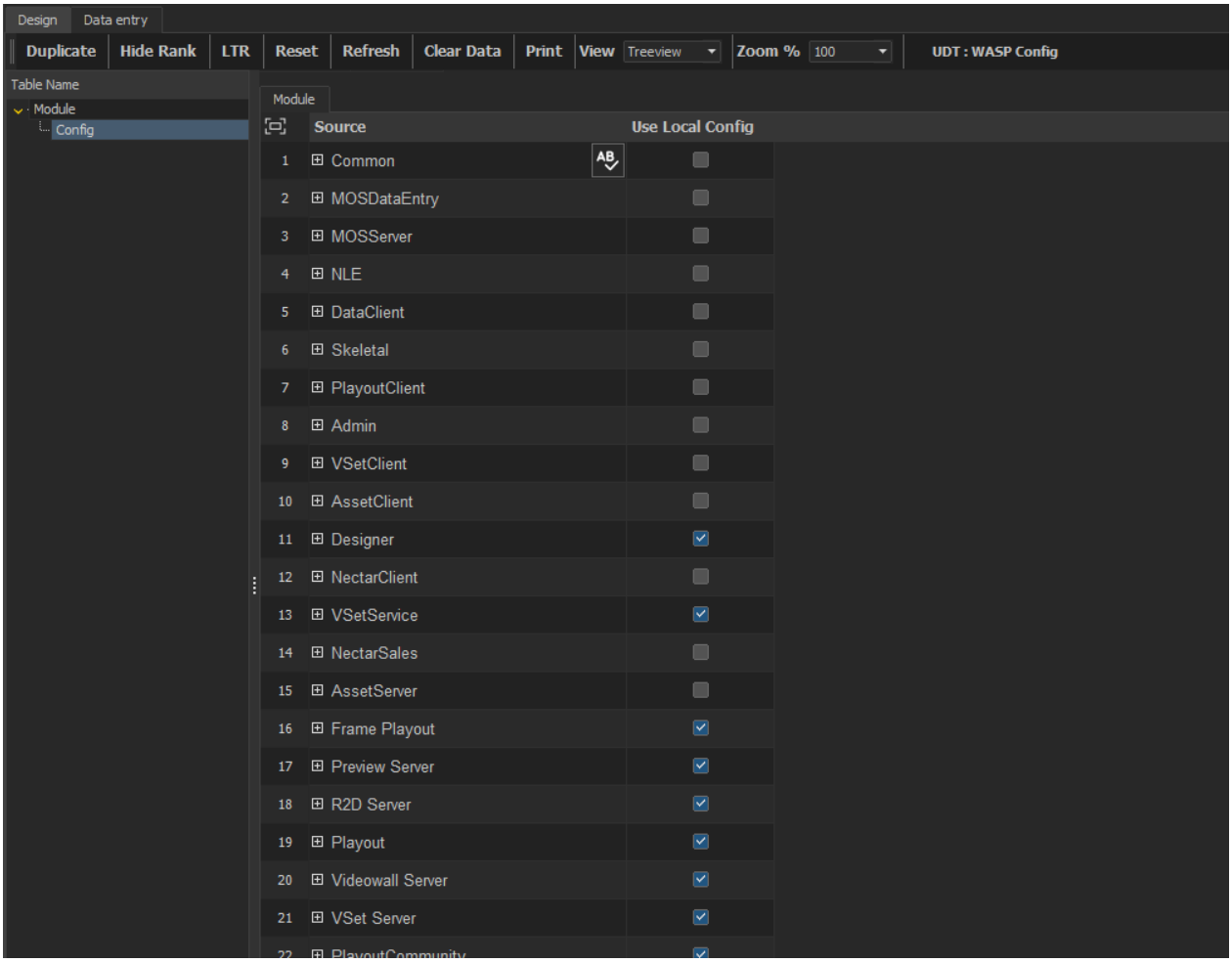


  - Hide Preview SS1_PVW – Hides the Preview View SS1_PVW is the name of the Preview Box where SS1 is the name of the Sting Server.
  - Hide Program SS1 hides the Program Window.
  - When only Preview Window is hidden, the Program Window window becomes Fullscreen and vice-versa.
  - Hide Statistics is a toggle to Show and Hide the Render Stats in the Engine Window. You can press Control+Space to toggle between show/hide and detailed view of the render stats in the Engine Window.
  - In the FullScreen view, Hide Text  option is added to the Context Menu. This is a toggle to Show or Hide the Dock Window Label.

- Graphics card computing is now utilized for rendering Shapes, Modifiers, 3D Text, Tile, Table Text, and Object Instancing. This enhancement aims to boost performance and streamline rendering times for these elements.
- FBX SDK version updated to 2020.3.2.
- Unreal Engine 5 SDK implemented. Not Unreal 4 will not work with Wasp3D. Passing the Placeholder to Unreal Functionality is stalled due to bug in Unreal Engine.
- Video Scaling quality is improved. This helps users to scale input live videos and use them for L-band or I-band graphics etc.

Configuration and Settings

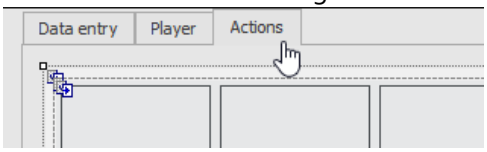
- Central Configuration has been implemented for all modules. Now user will be able to set configurations for all the modules in the Central Config UDT. The settings defined in the Central Config applies to all modules in the network. Incase the user wants to have settings per PC, User Local Config Checkbox can be clicked for the respective module.



- Now the Kernel Controller setup will ask for the Wasploader path. It is the location at which the Templates, Favorites and other Wasp3D assets are saved.
- Installation path for Playout folder name changed to Bin.

Form Tab

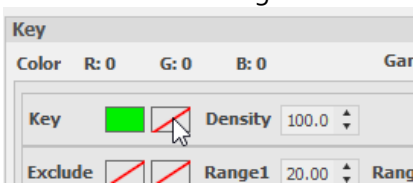
1. Redesigned the form controls to be more concise and cleaner. This enhancement ensures a better user experience with a sleeker and more streamlined interface.
2. The Page Controller is now named Paged Data, and the Data Page Player is now called Page Player.
3. Implement Variable changed event in dynamic dataset for Combo Box mapped with Sequencer data like SQL or Excel.
4. The Name of the Salvo Tab is changed to Actions Tab.



V-Set Client

- ImGui based interface has been created for V-Set add-in. This reduces the Render time and give more buffer time for virtual sets and graphics. The Interface is Dock based hence the user can customize and save the UI as per their preferences.
- Option to save multiple layouts is added in the Preferences

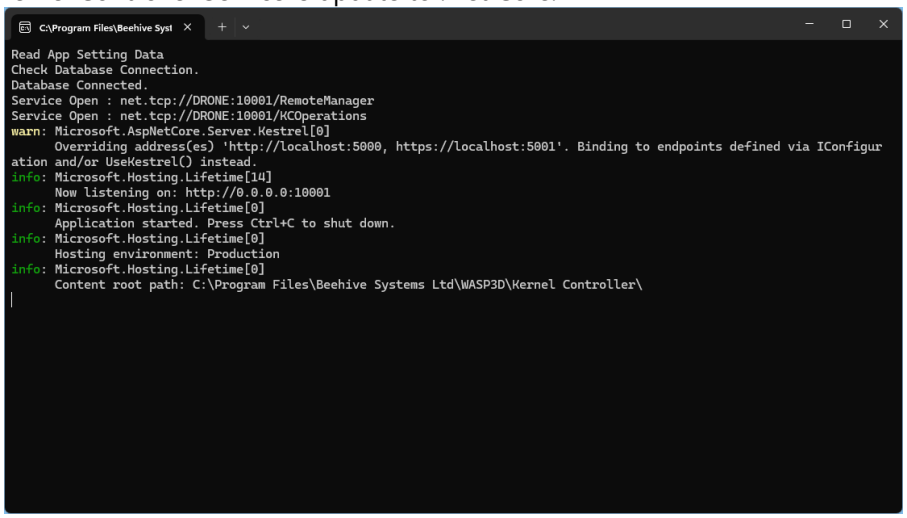
- User can now Press CTRL + Right-Click to reset the selected color in the Chroma Tab.



- In design mode, press the Delete button to delete the selected preset. Previously, this was achieved by performing a Down Swipe gesture on the respective preset.
- The Engine Toolbar now shows the path of the loaded template in play mode.
- Chroma Tab UI is reworked, and some properties are renamed.
    - Changed the name "Threshold" to "Range".
    - Combined "Density Min" and "Density Max" into a single "Density".
    - Updated "Matte Min" to "Matte Black" and "Matte Max" to "Matte White".
    - Renamed "Spill" to "Spill Correction" and "Spill > Correction" to "Brightness".
    - Added a new setting called "Suppress" to reduce alpha after setting Black and White matte properties.
    - Made R, G, and B numeric text boxes read-only; now adjust colors using the Color Swatch/Color Dialog box.
    - Renamed "Power" as "Gamma" to control intensity in the final chroma area.

KC, Data Client, Playout Client, and other modules.

- Kernel Controller Service is update to .Net Core.



- Implemented Cache Service in KC: This feature significantly reduces network load by introducing a local cache service. Users can now save templates or UDT (User Defined Tables) data locally, minimizing the need for constant network access. The system then synchronizes these changes with the main KC in the background, ensuring data integrity and efficient workflow management.
- Page Data columns displayed in the Page Player are organized to Best Fit Columns by default.
- Template unloading from Player on Playlist preference change is now corrected. If a player is added or removed from the Playlist, only the affected template will be unloaded if there is a reduction in the number of players. This is applicable for Multi-Server mode as well.