**JSON Data Documentation**

The save data is generated using the Scene.toJSON() method from Three.js. More info: [https://threejs.org/docs/#api/en/scenes/Scene.toJSON](https://threejs.org/docs/%23api/en/scenes/Scene.toJSON)

The base class of most objects in Three.js is Object3D. The “name” property is optional. User-defined properties can be added in the userData property of objects. When saving/downloading a scene, the scene data is saved into a JSON object. More details about specific types can be found here: <https://threejs.org/docs/> Examples of the JSON objects can be found at the bottom of this document.

**JSON basic types:**

* string
* number
* object
* array
* boolean
* null

**Objects in a default scene:**

JSON  
-> Scene  
 -> DirectionalLight  
 -> Default plane  
 -> AddLight indicator (“ghost” sphere)  
 -> Colours

**JSON object**

This is the top-level JSON object containing the scene as its child.

**Properties:**

geometries (array of objects): Holds the data for the geometry objects used to render the objects in   
 the scene. Consists of “SphereBufferGeometry” and   
 “PlaneBufferGeometry” by default.

materials (array of objects): Holds material data.

textures (array of objects): Holds texture data.

images (array of objects): Holds the URLs for images.

object (object): Contains the Scene object.

**Scene**

This is the object containing the other objects in the scene as its children.

**Properties:**

type (string): “Scene”

layers (number): Render layer.

matrix (array of numbers): Transformation matrix of the object.

children (array of objects): Objects in the scene.

background (number): The background colour for the scene.

**DirectionalLight**

This is the object containing the light source for the Three.js scene.

**Properties:**

type (string): “DirectionalLight”

layers (number): Render layer.

matrix (array of numbers): Transformation matrix (4x4) of the object.

color (number): Light colour.

intensity (number): Strength of the light.

shadow (object): A camera object used in creating depth maps to render shadows.

**AddLight indicator**

This is the sphere that provides an indicator for the placement of lights. It is hidden by default and only visible when in “add” mode.

**Properties:**

type (string): “DirectionalLight”

receiveShadow (bool): true

layers (number): Render layer.

matrix (array of numbers): Transformation matrix (4x4) of the object.

geometry (string): Identifier for the type of geometry this object uses.

material (string): identifier for the material used by this object.

**Colours**

This object is used to store the colour information for groups, zones and triggers in each scene.

**Properties:**

type (string): “Object3D”

name (string): “colours”

userData (object): Consists of the following 3 properties:

groupArray (array of numbers): An array of length 256 which stores the colours to be used   
 for each group (0-255).

zoneArray (array of numbers): An array of length 256 which stores the colours to be used for   
 each zone (0-255).

triggerColour (number): The colour to be used for the trigger line indicators.

layers (number): Render layer.

matrix (array of numbers): Transformation matrix (4x4) of the object.

**Light**

Light (smart light) object that can be added/removed from the scene.

**Properties:**

type (string): “Mesh”

userData (object): Consists of the following 19 properties:

name (string): Identifier of the light for front-end use.

key (string): Identifier of the light for back-end use.

fwVersion (string): Firmware version.

selected (bool): For internal use (selection and outlining objects).

updateProgress (bool): For internal use.

provisionProgress (bool): For internal use.

lastHeard (string): Date/time of last update.

status (number): Status of the light. (1 – ON, 2 – OFF)

pwm (number): PWM level.

msSens (string): Motion sensor sensitivity.

syncClock (bool): Synchronise clock to PC clock.

maxBrightness (number): 0-100 value of the light’s brightness.

dimmedBrightness (number): 0-100 value of the light’s brightness when dimmed.

msBrightness (number): 0-100 value of the light’s brightness when activated by the motion   
 sensor.

holdTime (number): The amount of time to remain in triggered brightness.

groupId (number): Identifier for the group the light belongs to. (0-255)

zoneId (number): Identifier for the zone the light belongs to. (0-255)

triggerers (array of strings): Keys of lights that can trigger this light.

triggerees (array of strings): Keys of lights that this light can trigger.

layers (number): Render layer.

matrix (array of numbers): Transformation matrix (4x4) of the object.

geometry (string): Identifier for the type of geometry this object uses.

material (string): identifier for the material used by this object.

**JSON Examples**