Test No	Action	Data	Expected Outcome	Actual Outcome	Comments
1	Get data from API	Sci-Toolset: Discovery API	A return object that is JSON. It should contain the list of geoJSON data.	It returned a JSON object which did contain the geoJSON for the data	n/a
2	Plot data onto map	API data	Each polygon to be displayed onto the map using the turf/leaflet js packages	Each polygon was plotted successfully.	We had an issue where our function did not return all data but there was an error with the for loop and now is fixed and shows all data.
3	Create popup events for the polygons	""	A popup to be shown on click of the polygon showing the data attached to it.	When clicking a polygon, it would show every polygon data.	We had code in the for each loop that shouldn't have been there, so we moved it and it worked.
4	Loading in external JSON files and plotting it	JSON file	That the external JSON file is loaded in correctly and the data is successfully plotted onto the map.	The JSON file is read in correctly and we can extract data from it allowing data to be plotted.	n/a
5	Showing specific polygons on search	API data	When the mission ID is entered it should only highlight the polygons specific to that mission.	The correct polygons were shown on the map and in the search results panel.	n/a
6	Panning the camera to the results	Search results	When the popup linked is clicked either the Polygon ID or the Mission ID it will pan the camera to the specific polygon or expand out to show all mission ID's.	The camera correctly panned to the right polygons and mission ID's.	n/a

7	Marking the polygons with markers from the results	""	When the mission ID/Polygon ID is searched for it adds a marker to the searched results	It does mark the corresponding searched results on the map.	However when the search is cancelled it would not remove the markers present this bug is removed.
8	Does search bar allow mission ids?	API data	When a mission ID is typed in the search bar accepts the data entered.	The search bar successfully searches for the Mission ID's	However initially a bug appeared as the map flashed upon search but it is now fixed.
9	Does cancelling the search reset the map and populate original data?	""	When clicking the cancel button in the search bar it removes markers and repopulates the map with all the plotted data.	Clicking the cancel search button removes the searched data from results and populates map with all polygons.	n/a
10	Animations on zooming out when the search is cleared.	""	When clearing search does the map auto zoom out to show all data.	Cancelling a search does zoom out to show all the plotted data automatically.	n/a
11	Do the histograms represent the data properly?	""	That the histograms represent what they should according to their titles.	They all show data that they are meant to.	The missions per county one relies on the function of calculate polygons over uk button to be pressed which takes minutes to produce.
12	Does the sidebar open and close on click?	""	When the sidebar tab is selected it expand out to fit 40% width of the page view.	The tab does open the side panel and it does expand to 40% width of the page.	n/a
13	Do the panels open and close on click?	""	When the header of the panel is selected it toggles between opening and closing	The headers do open and close when clicked.	n/a

14	Do the panels automatically open and close during a search?	""	When I search for a mission ID or Polygon ID it opens the search results automatically.	The search results panel does slide down automatically when a search is conducted	There was an error where the animation was jumpy and was not working right but fixed itself when we overcame performance issues.
15	Does the data on the panels automatically update on search?	""	When I search for any data the search results panel auto update.	The search results panel does automatically update.	However, there was an issue where every second search the page would refresh but now has been fixed.
16	Does the data on the histograms automatically update on search?	""	When we search for a specific mission ID the histogram automatically updates with the data from the currently searched mission	The histograms do automatically update giving precise data for the searched results.	n/a
17	Is the API call hidden and secure?	""	When the website communicates with the api there is no data of the websites api key and passwords as they are handled securely.	There is no data on the api key and passwords used meaning it is secure as sensitive info cannot be obtained	n/a
18	Does the side panel display the global area and percentage coverage?	""	When we open the side panel it gives the global area in Km^2 and how much the UK covers the global area.	Displays the percentage area the UK covers of the globe and the global area.	n/a
19	Does the search bar handle erroneous input?	Search results	When the search bar cannot find data that is searched it outputs 0 results rather than erroring.	It does display 0 results and no errors when erroneous input occurs.	n/a

20	Does the meta data in search results show the following data: Current Mission ID, Mission UK Coverage, Total Mission Area and Mission Start Date?	API Data	When we search for a mission it outputs in the search results the data for those headers given.	The mission ID, mission UK Coverage, Total Mission Area and Mission Start Date is shown when you choose to search a Mission ID.	We had an issue where the coverage percentage was incorrect due to it using the polygons that were over the sea and not land so we changed that function and gives correct number.
21	The map plots and shows the regions of the UK using a JSON file loaded into Leaflet.js.	JSON File	The map of the UK creates a layer to highlights its regions e.g north west, London etc.	The map does show the regions of the UK highlighted in blue.	n/a
22	Does the search bar allow the results to be filtered?	Search Results	When we search for data using our search bar it allows us to add additional filters to get the most accurate results.	There is a filter section for the data being searched that works appropriately.	n/a
23	The php file will automatically refresh the token given from the api.	API Data	The program will automatically collect a new token from the api to keep it authorized for use.	The php file does constantly refresh the token when it expires.	n/a
24	When updating data the screen will project a loading indicator stating the progress	API Data	When the Update Data button is clicked it will display a loading indicator stating progress.	The map does display a loading indicator and automatically goes away once completed.	n/a
25	When a button is clicked it automatically updates the data that is stored on the api and writes it into the local file.	API Data	The button when clicked will load in all data that is stored on the API.	It successfully updates the data.	Issue is that it does not cut the polygons so that it only covers the UK land it shows all data.
26	The polygons that are given from the api are cut and mapped around only the land of the UK.	API Data/JSON File	When the data is loaded in it automatically cuts the polygons to fit	The map does show the data cut around the border of the UK.	Only when the data is updated it reverts back to showing all

			around the border of the UK.		the polygons uncut.
27	The polygons on the map are different colours dependent on the amount of area covered.	API Data	The smaller areas are represented by the colour yellow and then the further it goes on it gradients to red. 500+ km^2 will be the darkest colour of red.	The polygons are different colours dependent on area. With the lowest areas being yellow in colour to the largest areas being a dark red colour.	n/a
28	A legend is displayed on the map to represent what each colour polygon value is.	JSON File	A legend to be positioned on the map at the top right hand of the page to show values of the polygons.	The legend does display top right of the page. It shows the correct colour to the value and accurately shows what the polygons represent.	n/a

Throughout this Sci-Toolset project we conducted both white and black box testing. This helped us when fixing any bugs and features to ensure it fulfils it purpose and provides no bias as black box was also conducted.

Test scripts:

- Input erroneous data
- Input boundary data
- Check events
- Check functionality by using different approaches