RIF4 System Validation

David Morley, Brandon Parkes & Peter Hambly

Imperial College London

Version 0.0: June 2017

# 1. Test Plan

This document first outlines the user requirements for the RIF4. Validation of the RIF4 will be based on how well these requirements are met. A range of testing methods are used to ensure the RIF4 is fit for purpose.

### Internal validation by assessment

RIF4 functionality will be confirmed by the development team. Here, requirements will be marked as one of the following:

* Implemented (1) - Feature is part of the production RIF4
* Not Operational (2) - Feature implemented but in development, incomplete or faulty
* Planned (3) - Feature not yet implemented but will be added ASAP
* Parked (4) - Feature not yet implemented but will be added in medium term
* Depreciated (5) - Feature no longer deemed useful. Will not be included

### Internal verification by assessment

RIF4 outputs will be confirmed by the development team. The results (e.g. relative risks, CIs, results from INLA) of a RIF4 study will be validated against the expected results from test cases calculated by other software outside the RIF4. (These test cases have yet to be defined).

### User validation by demonstration

It is planned to demonstrate the RIF4 at workshops and conferences and in meetings with potential users. RIF4 can be demonstrated directly to users to ensure that both the available capabilities and the outputs produced meet User Requirements. During these demonstrations, feedback on additional RIF4 functionality will be collated.

### User Validation by System Field Trials

Tables in section 3 provide test forms for each of the user requirements. User follow these steps and mark the result as either a pass or fail. Users are also encouraged to informally enter additional information ascertaining to usability issues, layout of the interface etc. During user testing, feedback, bug reports and feature requests will be collated.

A set of test data will be supplied for field trials. This will include example shapefiles and csv lists for area selections as well as pre-saved RIF study submissions for uploading tests.

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# 2. User Requirements

The following tables summarise the RIF user requirements (UR) as formulated prior to development. These were primarily taken from the existing RIF3.2 functionality and from informal discussions between RIF developers and users. These tables are not exhaustive and may be added to due to the *ad hoc* approach to RIF4 development. The testing process defined is designed to assess if these user requirements have been met.

## 1) Setup

|  |  |
| --- | --- |
| **UR Number** | **Description** |
| UR1.1 | RIF source files freely available |
| UR1.2 | All third party software freely available |
| UR1.3 | Option to use MS SQL Server (commercial database) |
| UR1.4 | RIF can be set up by a non-IT expert individual user |
| UR1.5 | Option to run on private network |
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## 2) Data Loader

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| --- | --- |
| **UR Number** | **Description** |
| UR2.1 | Load health data from csv |
| UR2.2 | Load geometry data (topoJSON) from Tile Maker tool |
| UR2.3 | Run in batch mode |
| UR2.4 | Validate/Verify/Clean data during loading |
| UR2.5 | Quantilise covariate data. |
| UR2.6 | Setup data access by role |
| UR2.7 | Integrate data into the RIF configuration tables |
| UR2.8 | Customize new results output reports |
| UR2.9 | Customize additional calculation methods |
| UR2.10 | Customize and perform additional data load extension processing |
| UR2.11 | Manage data loader meta data (e.g. data validation routines). |
| UR2.12 | Support data warehousing: partitioning and parallelization |
| UR2.13 | Comment table, columns |
| UR2.14 | Create primary key, unique keys, foreign keys, other indexes |
|  |  |

## 3) Study Submission

|  |  |
| --- | --- |
| **UR Number** | **Description** |
| UR3.1 | Personal user space and log in within the RIF |
| UR3.2 | Disease mapping or risk analysis option |
| UR3.3 | Create a new study |
| UR3.3.1 | Define study name |
| UR3.3.2 | Define study description |
| UR3.3.3 | Select numerator (and denominator) tables |
| UR3.4 | Re-run and existing study |
| UR3.5 | Copy and modify and existing study |
| UR3.6 | Select study and comparison area |
| UR3.6.1 | Select display and selection map level resolutions |
| UR3.6.2 | Selection with map table interaction |
| UR3.6.3 | Selection by uploading a list |
| UR3.6.4 | Selection by uploading a polygon shapefile using extent |
| UR3.6.5 | Selection by uploading a polygon shapefile using attribute classification |
| UR3.6.6 | Selection by uploading a polygon shapefile using attribute cut-points |
| UR3.6.7 | Selection by uploading a point shapefile with circular buffers |
| UR3.6.8 | Define up to 6 bands for risk analysis |
| UR3.6.9 | Define selections by geographic of population weighted centroids |
| UR3.7 | Enter investigation details |
| UR3.7.1 | Choose a taxonomy service |
| UR3.7.2 | Choose a predefined group of health codes |
| UR3.7.3 | Choose a health code from a list |
| UR3.7.4 | Choose age groups (upper and lower) |
| UR3.7.5 | Choose year range (upper and lower) |
| UR3.7.6 | Choose a single covariate |
| UR3.7.7 | Choose multiple covariates |
| UR3.7.8 | Enter multiple investigations |
| UR3.8 | Select a calculation method for Bayesian smoothing (HET, BYM, CAR) |
| UR3.9 | Run a new RIF study |

## 4) Data Viewer & Disease Mapping

|  |  |
| --- | --- |
| **UR Number** | **Description** |
| UR4.1 | Choropleth map of relative risks and rates |
| UR4.2 | Interactive, clickable map of results |
| UR4.3 | Output O&E cases, directly standardised rates, Empirical Bayes |
| UR4.4 | Results table exportable to csv |
| UR4.5 | Map data exportable as GeoJSON |
| UR4.6 | Exportable to SaTScan |
| UR4.7 | Customisable reports |
| UR4.7.1 | Study Information |
| UR4.7.2 | Source areas/points (for risk analysis) |
| UR4.7.3 | Comparison areas |
| UR4.8 | Compressed ZIP file of results |
| UR4.9 | Risk analysis Chi-sq and Mantel-Haenszel test results |
| UR4.10 | View covariate, numerator, denominator and population data |
| UR4.11 | View geometry (polygon) data |
| UR4.12 | Interact with the map to filter the displayed tabular data spatially |
| UR4.13 | Choose which columns to display in tabular data |
| UR4.14 | Choose which data to display in the mouse hover |
| UR4.15 | Use common choropleth map classifications |
| UR4.16 | Import and add contextual map layers |
| UR4.17 | Display 1, 2 or 4 (multiple) maps |
| UR4.18 | Display population pyramid |
| UR4.19 | Display histogram of results |
| UR4.20 | Change basemaps or use no basemap |
| UR4.21 | Pan, Zoom maps |

## 5) Information Governance

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| --- | --- |
| **UR Number** | **Description** |
| UR5.1 | Create RIF users or managers |
| UR5.2 | Manage user access privileges |
| UR5.3 | Share or revoke access to studies from users |
| UR5.4 | Manage projects, start/end dates and users allocated to projects |
| UR5.5 | Manage health themes (a collection of numerators) and data access by role. |
| UR5.6 | Manage system information governance mode used for all studies |
| UR5.7 | Manage study data extraction, results calculation and extract data download |
| UR5.8 | Manage low cell count controls |
|  |  |

## 6) Documentation and training

|  |  |
| --- | --- |
| **UR Number** | **Description** |
| UR6.1 | RIF manual available |
| UR6.2 | RIF test data sets available |

# 3. Test Forms

## Set-up

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Internal Validation** | **Test Steps** | **Expected Output (pass/fail criteria)** | **Result (pass/fail)** | **Additional comments** |
| TUR1.1 | Download RIF | 1 | 1. Go to RIF GitHub page  2. See download instructions section  3. Download RIF files | RIF source files downloaded as a ZIP file |  |  |
| TUR1.2 | 3rd Party software download | 1 | 1. Go to RIF GitHub page  2. See download instructions section  3. Download and install programs listed | PostgreSQL, Tomcat, and others installed |  |  |
| TUR1.3 | MS SQL Server | 1 | 1. Set up RIF properties file according to the readme to recognise SQL Server DB | RIF will connect to MSSQL server on opening |  |  |
| TUR1.4 | Set-up | 1 | 1. Go to RIF GitHub page  2. Follow the set-up instructions | RIF login page opens in a web browser |  |  |
| TUR1.5 | Private network set-up | 1 | 1. Go to RIF GitHub page  2. Follow the set-up instructions | RIF login page opens in a web browser |  |  |

## Data Loader

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Internal Validation** | **Test Steps** | **Expected Output (pass/fail criteria)** | **Result (pass/fail)** | **Additional comments** |
| TUR2.1 | Set-up | 1 | 1. Set up RIFDataLoaderToolStartupProperties.properties file | DataLoader will connect to desired temporary database |  |  |
| TUR2.2 | Start up | 1 | 1. Start data loader to get main screen | Blank main screen will be shown |  |  |
| TUR2.3 | Save & Load configuration data | 1 | 1. Click File-Sava As.  2. Save configuration data locally in XML format  3. Restart data loader  4. Click File-Load.  5. Find & open the previously saved configuration file | Check the XML file is created as expected.  Check the configuration data is loaded as expected. |  |  |
| TUR2.4 | Define geographies | 1 | 1. Click ‘Browse’ within the ‘define geographies’ area.  2. Select an XML file within which the geographies are defined.  3. Press ‘OK’ in the ‘Geography Editor Dialog’ window | In the ‘Geography Editor Dialog’, confirm that the geography data looks correct. |  |  |
| TUR2.5.1 | Define Health Theme | 1 | 1. Click the ‘Add’ button in the ‘Step 2’ area.  2. Enter the name and description of the health theme, then click OK | The health theme is listed under ‘Step 2’ |  |  |
| TUR2.5.2 | Edit Health Theme | 1 | 1. Select an existing health theme  2. Click ‘Edit’ in the ‘Step 2’ area.  3. Edit the name and/or description of the health theme, click ‘OK’ | The changes to the health theme are saved |  |  |
| TUR2.5.3 | Delete Health Theme | 1 | 1. Select an existing health theme  2. Click ‘Delete’ in the ‘Step 2’ area | The health theme is deleted |  |  |
| TUR2.6 | Define Custom Data types | 1 | 1. Click ‘edit’ in the ‘Step 3’ area  2. Edit & define additional custom data types | Confirm the custom data types are created |  |  |
| TUR2.7 | Define Data Importing Hints | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area | Confirm the ‘Configuration Hints Editor’ dialog box opens. |  |  |
| TUR2.7.1 | Create a data set configuration hint | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Click ‘Add’ when the ‘Data Set Configuration Hints’ tab is selected  3. Enter regular expression pattern & other details for the hint  14. Click OK | Data set configuration hint will be created |  |  |
| TUR2.7.2 | Edit a data set configuration hint | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Select an existing ‘Data Set Configuration Hints’  3. Enter regular expression pattern & other details for the hint  4. Click OK | Changes to the data set configuration hint will be saved. |  |  |
| TUR2.7.3 | Delete a data set configuration hint | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Select an existing ‘Data Set Configuration Hint’  3. Click ‘Delete’ | Data set configuration hint will be deleted |  |  |
| TUR2.7.4 | Change order of data set configuration hints | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Select an existing ‘Data Set Configuration Hint’  3. Click ‘Shift Up’ or ‘Shift Down’ | Order of data set configuration hints will be changed. |  |  |
| TUR2.7.5 | Create a data set field configuration hint | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Click ‘Add’ when the ‘Data Set Field Configuration Hints’ tab is selected  3. Enter regular expression pattern & other details for the hint  4. Click OK | Data set field configuration hint will be created |  |  |
| TUR2.7.6 | Edit a data set field configuration hint | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Select an existing ‘Data Set Field Configuration Hints’  3. Enter regular expression pattern & other details for the hint  4. Click OK | Changes to the data set field configuration hint will be saved. |  |  |
| TUR2.7.7 | Delete a data set field configuration hint | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Select an existing ‘Data Set Field Configuration Hint’  3. Click ‘Delete’ | Data set field configuration hint will be deleted |  |  |
| TUR2.7.8 | Change order of data set field configuration hints | 1 | 1. Click ‘Edit’ in the ‘Step 4’ area  2. Select an existing ‘Data Set Field Configuration Hint’  3. Click ‘Shift Up’ or ‘Shift Down’ | Order of data set field configuration hints will be changed. |  |  |
| TUR2.8.1 | Add denominator data | 1 | 1. Click ‘Add’ in the ‘Step 5’ area  2. Navigate to and select a file that contains denominator data.  3. click ‘Preview’  4. Click ‘OK’ | The denominator data is loaded into the ‘Denominator Configuration Editor’ dialog. |  |  |
| TUR2.8.2 | Edit denominator data | 1 | 1. Select an existing denominator entry.  2. Click ‘Edit’ | The denominator data is loaded into the ‘Denominator Configuration Editor’ dialog. |  |  |
| TUR2.8.3 | Delete denominator data | 1 | 1. Select an existing denominator entry.  2. Click ‘Delete’ under ‘Step 5’ | The denominator entry is deleted |  |  |
| TUR2.9.1 | Add numerator data | 1 | 1. Click ‘Add’ in the ‘Step 6’ area  2. Navigate to and select a file that contains numerator data.  3. click ‘Preview’  4. Click ‘OK’ | The numerator data is loaded into the ‘Numerator Configuration Editor’ dialog. |  |  |
| TUR2.9.2 | Edit numerator data | 1 | 1. Select an existing numerator entry.  2. Click ‘Edit’ | The numerator data is loaded into the ‘Numerator Configuration Editor’ dialog. |  |  |
| TUR2.9.3 | Delete numerator data | 1 | 1. Select an existing numerator entry.  2. Click ‘Delete’ under ‘Step 6’ | The numerator entry is deleted |  |  |
| TUR2.10.1 | Add covariate data | 1 | 1. Click ‘Add’ in the ‘Step 7’ area  2. Navigate to and select a file that contains covariate data.  3. click ‘Preview’  4. Click ‘OK’ | The covariate data is loaded into the ‘Covariate Configuration Editor’ dialog. |  |  |
| TUR2.10.2 | Edit covariate data | 1 | 1. Select an existing covariate entry.  2. Click ‘Edit’ | The covariate data is loaded into the ‘Covariate Configuration Editor’ dialog. |  |  |
| TUR2.10.3 | Delete covariate data | 1 | 1. Select an existing covariate entry.  2. Click ‘Delete’ under ‘Step 7 | The covariate entry is deleted |  |  |
| TUR2.11 | Select Output Directory | 1 | 1. Click ‘Browse’ next to the ‘Output Directory’ field.  2. Navigate to and select the desired output directory on the local host.  3. Click ‘Open’ | The selected directory path is displayed in the ‘Output Directory’ field. |  |  |
| TUR2.12 | Run the data loader | 1 | 1. Ensure geography, denominators, numerators & covariates are defined.  2. Ensure output directory is selected.  3. Click ‘Run’ | .zip, .csv, .fmt & .sql files are created in the output directory. |  |  |

## Study Submission

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Internal Validation** | **Test Steps** | **Expected Output (pass/fail criteria)** | **Result (pass/fail)** | **Additional comments** |
| TUR3.1 | Personal log in | 1 | 1. Log in with your username and password  2. Click the log-out icon | RIF study submission page will open. You will return to the login screen on logout |  |  |
| TUR3.2 | Disease mapping or risk analysis | 1 | 1. Open 'Study Area' option  2. Click the disease mapping/risk analysis switch | A risk mapping study will allow you to select up to 6 bands |  |  |
| TUR3.3 | Create a new study | 1 | 1. Log in to the RIF  2. Use the 'Study Submission' tab | Four tree icons will appear greyed out |  |  |
| TUR3.3.1 | Study name | 1 | 1. Use the 'Study Submission' tab  2. Replace the 'My RIF Study' placeholder with your own study name | New study name on screen |  |  |
| TUR3.3.2 | Study description | 1 | 1. Use the 'Study Submission' tab  2. Click 'run study' (a warning will be given for an incomplete study)  3. Enter text in the description box | Study description on screen (and will be stored in the job submission) |  |  |
| TUR3.3.3 | Health Theme | 1 | 1. Use the 'Study Submission' tab  2. Use the Health Theme input box drop-down to select a table | Health theme will change. Also geography, numerator, denominator will change |  |  |
| TUR3.3.4 | Geographies | 1 | 1. Use the 'Study Submission' tab  2. Use the Geography input box drop-down to select a table | Geography will change. On opening 'Study Area' the new geography will be visible |  |  |
| TUR3.3.5 | Numerator/ Denominator tables | 1 | 1. Use the 'Study Submission' tab  2. Use the Numerator input box drop-down to select a table  3. Change the health theme to investigate | Numerator will change. Note denominator is selected automatically as is not editable. |  |  |
| TUR3.4 | Existing study | 1 | 1. Use the 'Study Submission' tab  2. Click 'Open from file'  3. Use a valid RIF.json file (or see test data) | Study submission options will be filled and a success notification given |  |  |
| TUR3.5 | Copy & modify study | 1 | 1. Use the 'Study Submission' tab  2. Save an existing study using 'save'  3. Open an existing study as in TUR3.4  4. Change some details of the opened study | Details of a loaded study will be editable |  |  |
| TUR3.6 | Select areas | 1 | 1. Use the 'Study Submission' tab  2. Open either study or comparison area option | New window will open with a map and a table |  |  |
| TUR3.6.1 | Resolution | 1 | 1. Use the drop-downs to select the resolution of selection and of results | Map will update. Note map will not change on altering resolution of results |  |  |
| TUR3.6.2 | Selection interaction | 1 | 1. Select some areas on the map with the mouse  2. Select some rows in the table with the mouse | Selections in the map and table will sync automatically |  |  |
| TUR3.6.3 | Selection by list | 1 | 1. Click 'Upload from list'  2. Use a valid csv list of area IDs (or see test data) | Areas contained in the csv list will be selected or a warning/error given on failure |  |  |
| TUR3.6.4 | Selection by polygon extent | 1 | 1. Click 'Select by shapefile' tool in map toolbar  2. Open a valid polygon shapefile (or see test data)  3. Select to select 'By maximum extent only' | Polygon extent drawn on map and all intersecting districts (by centroid) selected |  |  |
| TUR3.6.5 | Selection by polygon attribute classification | 3 |  |  |  |  |
| TUR3.6.6 | Selection by polygon attribute cut-offs | 1 | 1. Click 'Select by shapefile' tool in map toolbar  2. Open a valid polygon shapefile (or see test data)  3. Select to select 'By exposure attribute'  3. Select an attribute from the shapefile with the drop-down  4. Enter value(s) for exposure cut-offs | Polygon extent drawn on map and all intersecting districts (by centroid) selected according to exposure values |  |  |
| TUR3.6.7 | Selection by points and circular buffers | 1 | 1. Click 'Select by shapefile' tool in map toolbar  2. Open a valid point shapefile (or see test data)  3. Enter value(s) in metres for buffer radius around points | Concentric buffers drawn on screen and all intersecting districts (by centroid) selected |  |  |
| TUR3.6.8 | Six bands for risk analysis | 1 | 1. Use the 'Study area' option from the 'Study Submission' tab  2. Click the disease mapping/risk analysis switch to select risk mapping | Band drop-down in the map should run to 6. For disease mapping and the comparison area the maximum is 1. |  |  |
| TUR3.6.9 | Population weighted centroids | 2 | 1. Use the 'Study area' option from the 'Study Submission' tab  2. Click the 'centroids' tool in the map toolbar | If population centroids are available (from the DB) blue points will be plotted on screen. If not, red points show the geographic centroid |  | (The DB is still only providing geographic centroids) |
| TUR3.7 | Investigation details | 1 | 1. Use the 'Study Submission' tab  2. Click on the 'Investigation Parameter' tree | Investigation parameters window will open |  |  |
| TUR3.7.1 | Taxonomy service | 1 | 1. Use the Investigation parameters window  2. Click the taxonomy drop-down  3. Select ICD10 | ICD10 should be an option for taxonomy |  |  |
| TUR3.7.2 | Predefined code groups | 4 |  |  |  |  |
| TUR3.7.3 | Health code from list | 1 | 1. Use the Investigation parameters window  2. Enter a search term, click search  3. Click on the desired term | Selected term(s) will appear in list on the right side |  |  |
| TUR3.7.4 | Age groups | 1 | 1. Use the Investigation parameters window  2. Select upper and lower age groups | Age groups drop-downs populated and selectable. e.g. 20\_24 |  |  |
| TUR3.7.5 | Year range | 1 | 1. Use the Investigation parameters window  2. Select upper and lower year ranges | Year drop-downs populated and selectable. e.g. 1992 |  |  |
| TUR3.7.6 | Single covariate | 1 | 1. Use the Investigation parameters window  2. Select a covariate with the drop-down | Depending on dataset, drop-down populated and selectable. At least 'NONE' is an option |  |  |
| TUR3.7.7 | Multiple covariates | 4 |  |  |  |  |
| TUR3.7.8 | Multiple investigations | 4 |  |  |  |  |
| TUR3.8 | Bayesian methods | 1 | 1. Use the 'Study Submission' tab  2. Click the statistical methods option  3. Select a statistical method | HET, BYM, CAR or None options selectable |  |  |
| TUR3.9 | Run a study | 1 | 1. Enter all study details (all the trees) or load study from file  2. Click 'run study' | Green success notification given on submission. Study will appear in status table. Success notification on completion. Study available in mapping windows |  |  |

## Data Viewer & Disease Mapping

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Internal Validation** | **Test Steps** | **Expected Output (pass/fail criteria)** | **Result (pass/fail)** | **Additional comments** |
| TUR4.1 | Choropleth maps | 1 | 1. Use the 'Data viewer' or 'Disease mapping' tab  2. Select a study and sex to map  3. Click the choropleth map icon in the map toolbar  4. Select option for map (e.g. attribute to map, colours, breaks etc)  5. Click apply | Choropleth map dialog will open and populated with options. Distribution histogram shown. Map rendered on sreen |  |  |
| TUR4.2 | Interactive results | 1 | 1. Make a choropleth map  2. Click on map polygon  3. If using data viewer click on a row in table  4. If using disease mapping, click on the chart | Selections highlighted green. In data viewer, selected area also highlighted in table. In mapping, selection also highlighted on chart |  |  |
| TUR4.3 | Output RR, cases etc. | 1 | 1. Use the 'Data viewer' tab  2. Select a study | Results table populated with feasible numbers, no null or NA columns. Also choropleth maps possible |  |  |
| TUR4.4 | Export results to csv | 1 | 1. Use the 'Data viewer' tab  2. Click the hamburger button on the table  3. Select 'export all data as csv' | Data in table saved as a csv file |  |  |
| TUR4.5 | Export maps as geoJSON | 3 |  |  |  |  |
| TUR4.6 | Export to SaTScan | 3 |  |  |  |  |
| TUR4.7 | Customisable reports | 4 |  |  |  |  |
| TUR4.7.1 | Study Information | 2 | 1. Use the 'Data viewer' or 'Disease mapping' tab  2. Click the 'i' icon next to the study drop-downs | A new window opens containing the info for the current study |  | (The database is currently not able to return all relevant information) |
| TUR4.7.2 | Export source points | 5 |  |  |  | (This is pointless, as a shapefile is already the source of these points) |
| TUR4.7.3 | Export map areas | 2 | 1. Use any option with a map container  2. Click the ''Quick export map' icon in the map toolbar  3. Save the file | Current basemap and polygons in view saved as a png |  | (Does not work on IE, temperamental on other browsers) |
| TUR4.8 | Compressed ZIP file of results | 4 |  |  |  |  |
| TUR4.9 | Chi-Sq for risk analysis | 4 |  |  |  |  |
| TUR4.10 | View covariate, numerator, denominator and population data | 4 |  |  |  |  |
| TUR4.11 | View geometry data | 1 | 1. Use any option with a map container | Polygons visible over a basemap layer |  |  |
| TUR4.12 | Interact with map to filter tabular data | 1 | 1. Use the 'Data viewer' tab  2. Use the filter options at the top of each column  3. Toggle areas in the map and table  4. Table supports sorting a multi-select | Table rows re-orderable and filterable. Map and table selection automatically synced. |  |  |
| TUR4.13 | Choose which columns to display in table | 5 |  |  |  | (Not needed as there are very few columns anyway) |
| TUR4.14 | Choose which data to display on mouse hover | 1 | 1. Use the 'Data viewer' or 'Disease mapping' tab  2. Hover attribute corresponds to the attribute selected for choropleth mapping |  |  |  |
| TUR4.15 | Use common choropleth map classifications |  | 1. Use the 'Data viewer' or 'Disease mapping' tab  2. Click the choropleth map icon in the map toolbar  3. Health Atlas RR and PP schemes available | Maps rendered using standard health atlas colour schemes |  |  |
| TUR4.16 | Import and add contextual layers | 5 |  |  |  | (Could be possible, further discussion needed on how much the RIF will compete with GIS software) |
| TUR4.17 | Multiple maps | 1 | 1. Use the 'Disease mapping' tab | Two maps rendered |  |  |
| TUR4.18 | Population pyramid | 1 | 1. Use the 'Data viewer' tab  2. Select a study to view | Graph plotted |  |  |
| TUR4.19 | Histogram of results | 1 | 1. Use the 'Data viewer' tab  2. Select a study to view  3. Histogram corresponds to currently mapped attribute | Graph plotted |  |  |
| TUR4.20 | Basemaps | 1 | 1. Use any option with a map container  2. Click the 'basemap' icon in the map toolbar  3. Select a basemap | Basemap dialogue will open populated with options. Selected map rendered on screen |  |  |
| TUR4.21 | Pan, Zoom maps | 1 | 1. Use any option with a map container  2. Use the map tools available | Map should behave like any standard on-line map container |  |  |
|  |  |  |  |  |  |  |

## Information Governance

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Internal Validation** | **Test Steps** | **Expected Output (pass/fail criteria)** | **Result (pass/fail)** | **Additional comments** |
| TUR5.1 |  |  |  |  |  |  |
| TUR5.2 |  |  |  |  |  |  |
| TUR5.3 |  |  |  |  |  |  |
| TUR5.4 |  |  |  |  |  |  |
| TUR5.5 |  |  |  |  |  |  |
| TUR5.6 |  |  |  |  |  |  |
| TUR5.7 |  |  |  |  |  |  |
| TUR5.8 |  |  |  |  |  |  |

## Documentation and training

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Internal Validation** | **Test Steps** | **Expected Output (pass/fail criteria)** | **Result (pass/fail)** | **Additional comments** |
| TUR6.1 | Manual | 1 | 1. Download |  |  | In development |
| TUR6.2 | Test data | 1 | 1. Download | At least SASULAND obtainable |  |  |