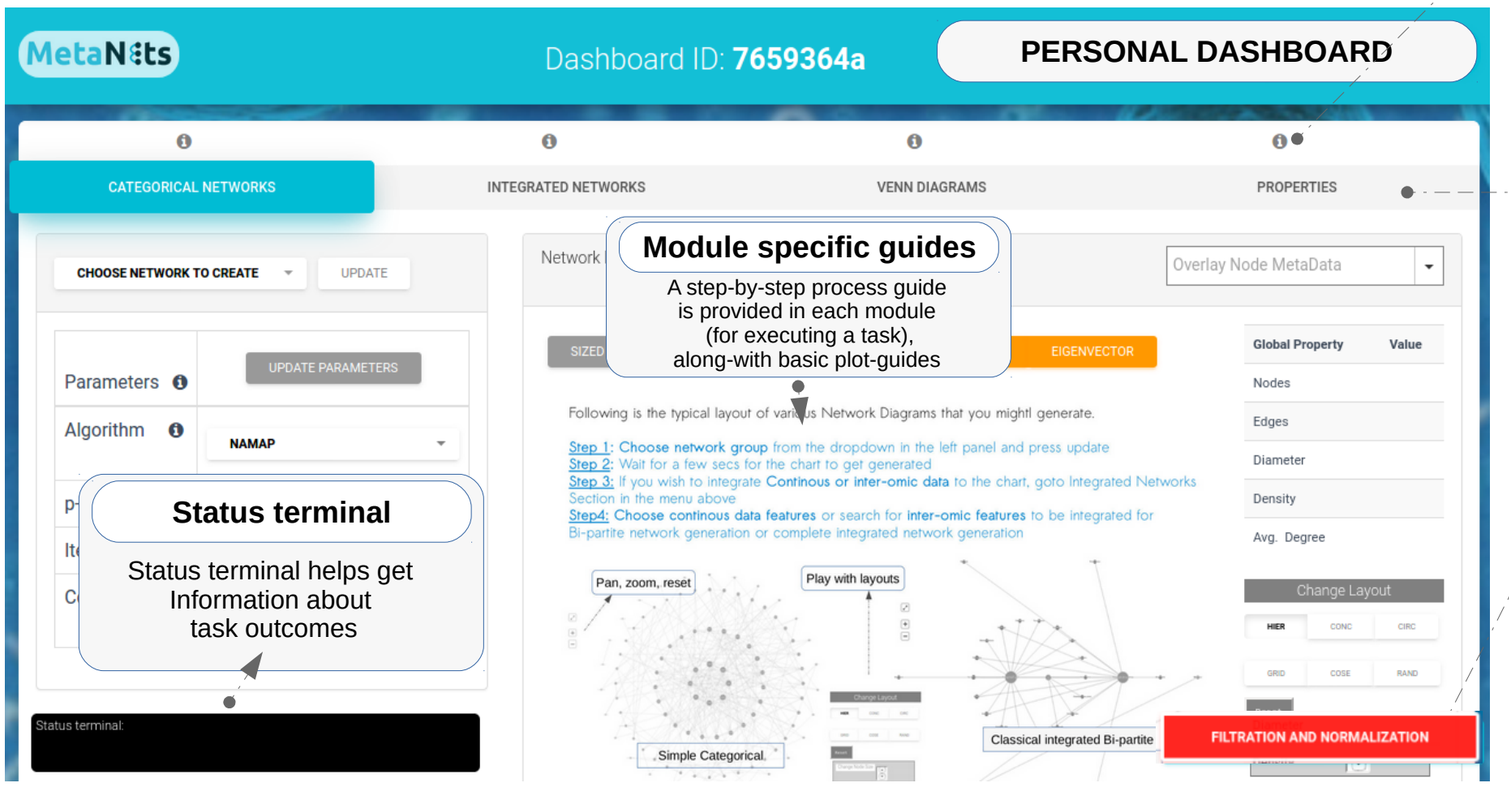
PERSONAL DASHBOARD, MODULES & GUIDES

Once a job has been submitted to MetaNets, user is taken to a personal dashboard. Each dashboard is tagged to a trackable Dashboard ID, which is displayed on the top.

There are 4 analytical and visualization modules in MetaNets:
1. Categorical Network Analysis
2. Integrated (multi-omic) Network Analysis
3. Network Composition Analysis
4. Network Property Analysis



Module specific guides

A step-by-step process guide is provided in each module (for executing a task), along-with basic plot-guides

Status terminal

Status terminal helps get Information about task outcomes

Info tags

Access the (i) tags at various sections of the modules to get assistive infomation

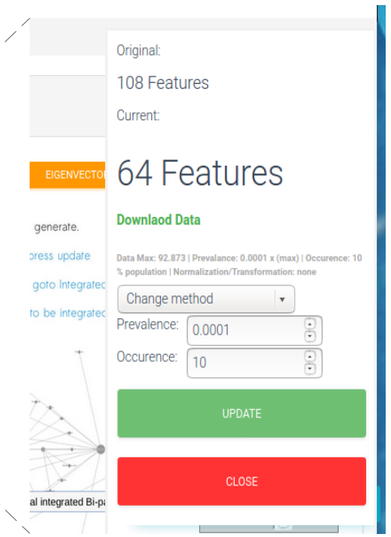
Multi-modular

Use this menu panel for Accessing multiple analysis and visualization Modules in the personal dashboard

Dynamic data management

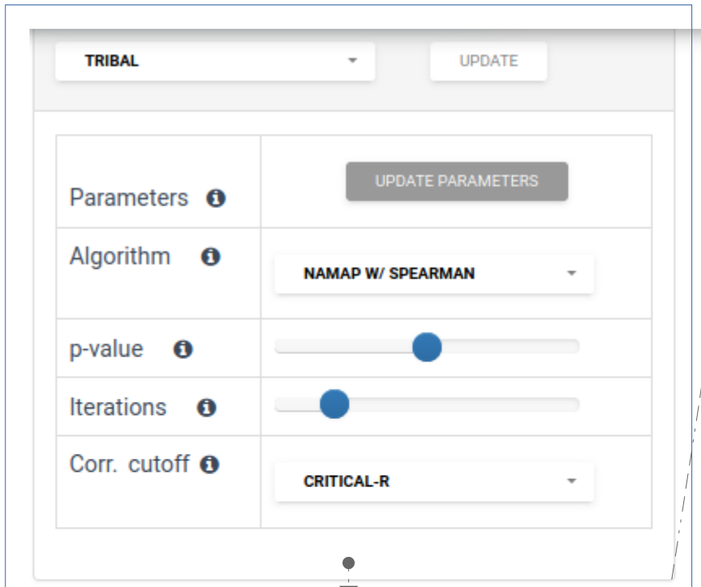
- Use this floating button to access Various filtration, normalization and transformation methods
- This option may be used multiple times, at any point in time.

All plots generated in MetaNets are **downloadable as Hi-Res images.**

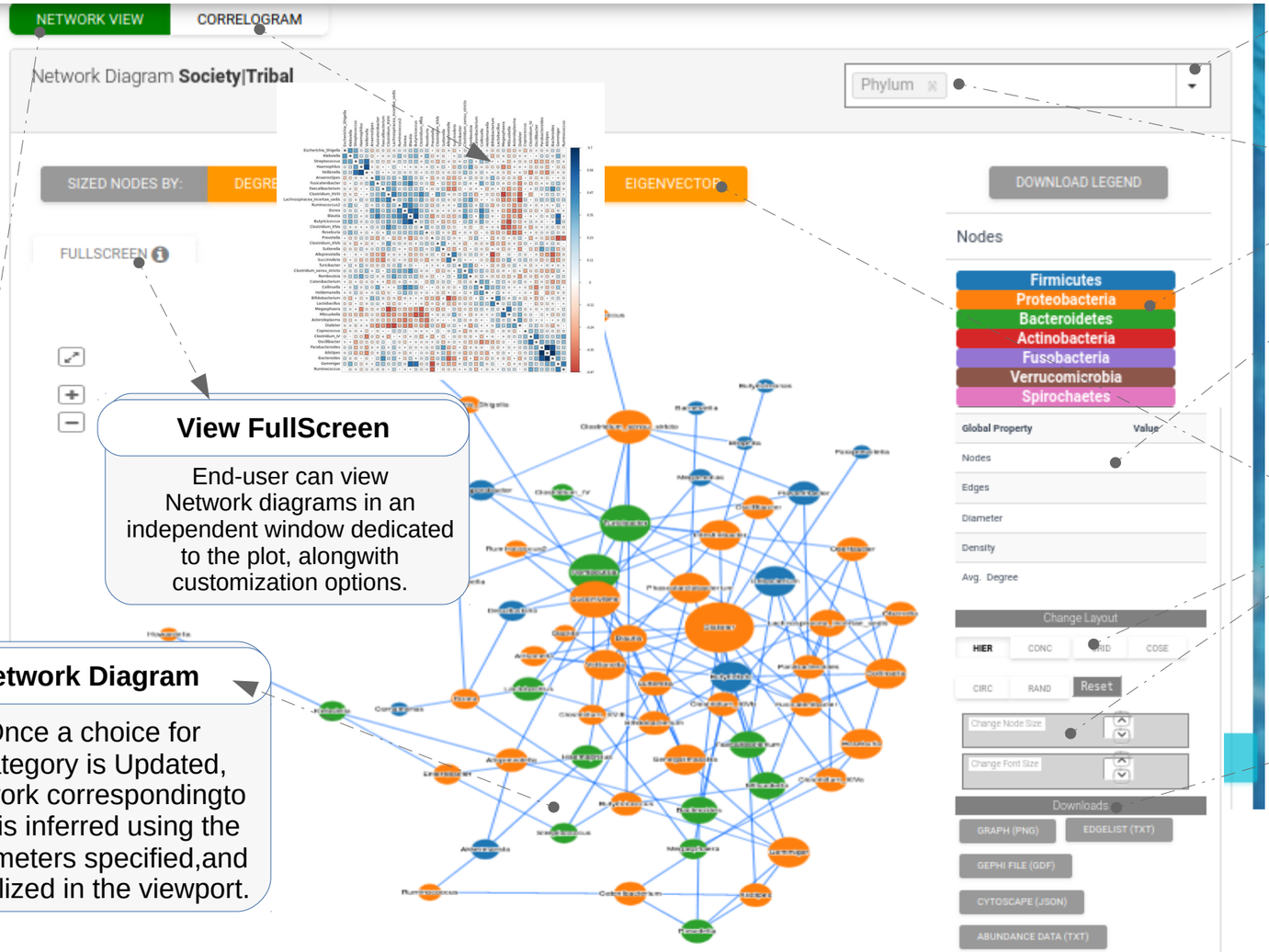


MODULE1: CATEGORICAL NETWORKS

MetaNets creates group level networks for each category (also called Environment) in the supplied meta-data . For example, for Geography environment, categorical groups can be India, US, Japan, Europe etc. MetaNets automatically infers all possible categorical groups in the meta-data and provides options to perform network analysis on each of such groups.

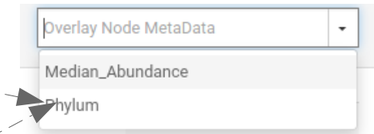


Refer Next Slide



Node meta-data

Dropdown option to overlay Node meta-data



Global Properties

Tabulated summary of the key global Properties of the network being analysed.

View FullScreen

End-user can view Network diagrams in an independent window dedicated to the plot, alongwith customization options.

Customizations

- **Layouts**
- Property **mapping**
- Node and Font sizes

Status terminal

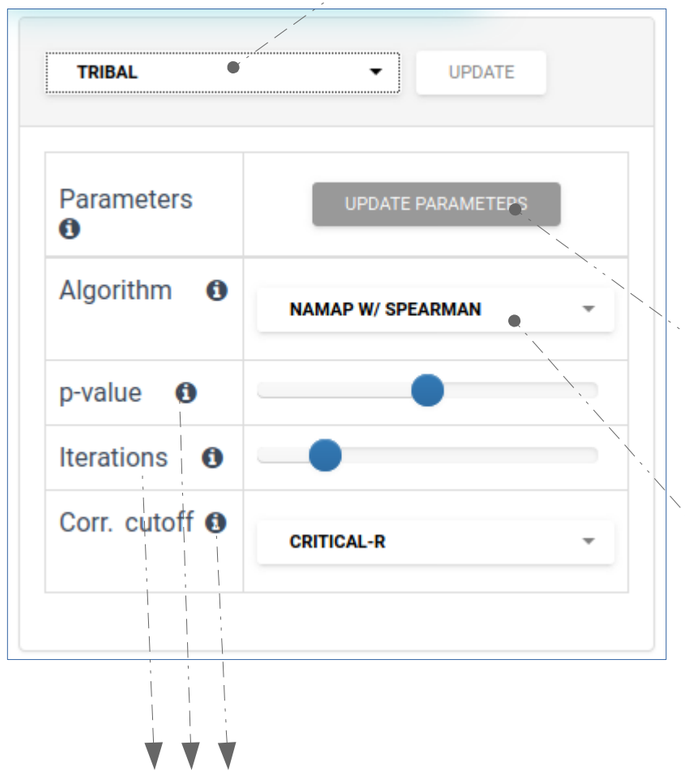
Status terminal helps get Information about task outcomes

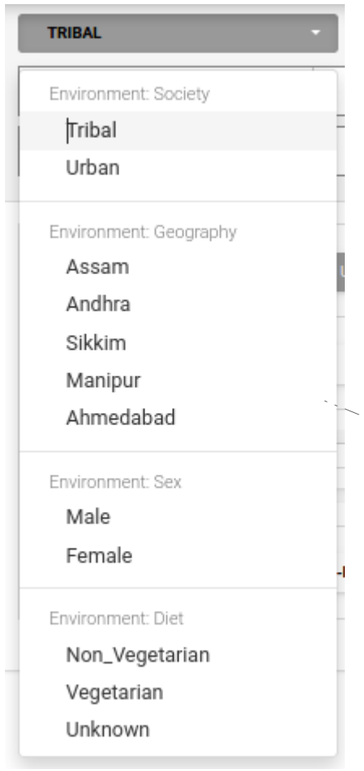
Network Diagram

Once a choice for acategory is Updated, Network correspondingto that is inferred using the parameters specified,and visualized in the viewport.

Download Options

- Plot Downloads
- Cytoscape and Gephi compatible files
- Edgelist
- Abundance Data



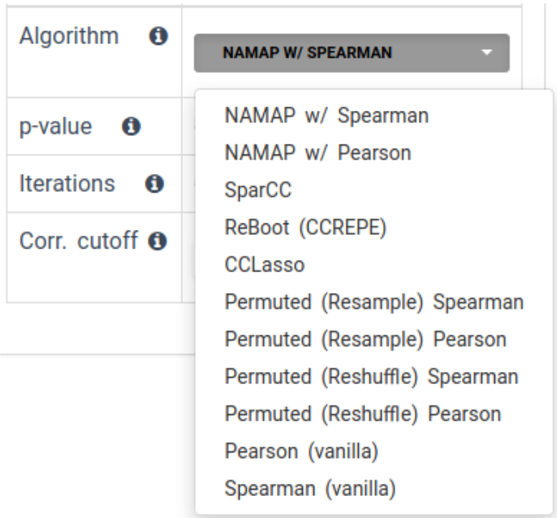


Categorical Networks

Comprehensive analysisand visualization of all Categorical networksidentified through metadata

Update Parameters

Use this option to propagate the chosen options across all the modules of MetaNets.
If not clicked, the chosen parameters will be applicable only for the current module.



Network inference algorithms

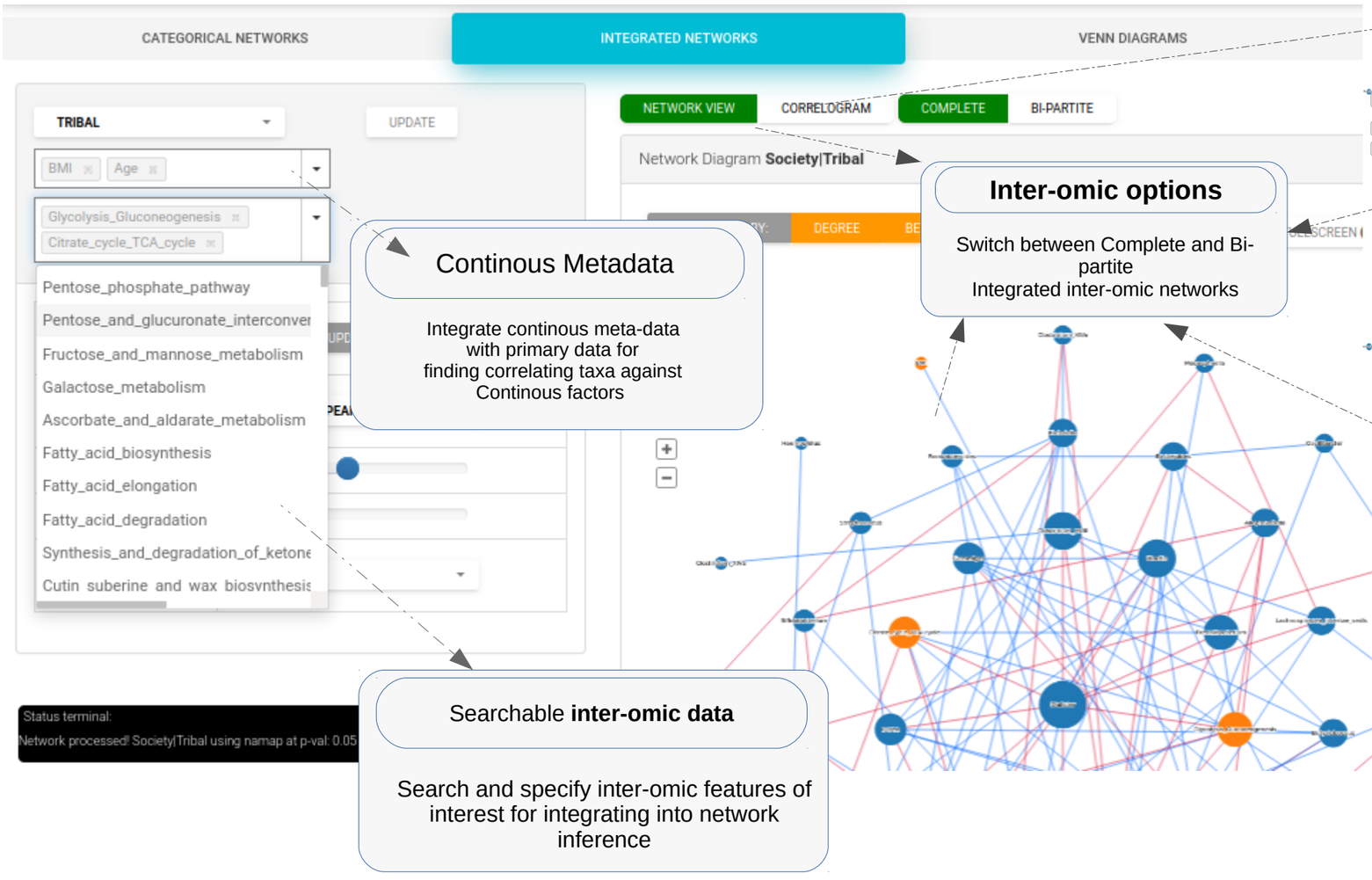
Various popular algorithms are provided for dynamic inference and comparisons

Edge filtration parameters

Various relevant parameters like p-value, Iterations, r-value may be changed dynamically

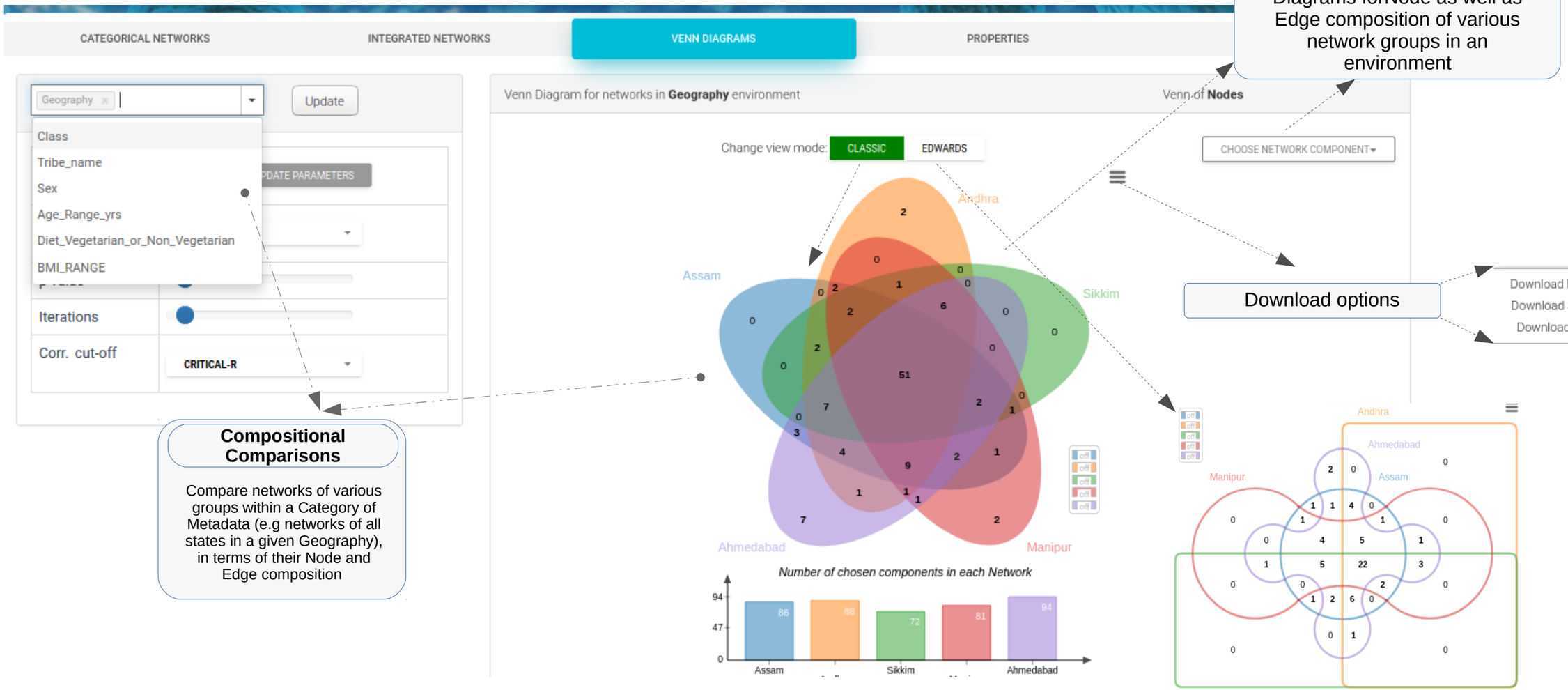
MODULE2: INTEGRATED NETWORKS

Integrated Networks are created for a categorical group by combining continuous groups/ features having continuous values from Primary Metadata and/ or Secondary Input data to create a complex or inter-omic view of the microbiome associations. User can also change the layouts and reset the node sizes as required.



MODULE3: NETWORK COMPOSITIONS (VENN DIAGRAMS)

This module allows group level comparisons for each environment in the MetaData, in terms of **Node and Edge compositions** of various networks in the environmental category. This is enabled through interactive Venn diagrams for node and edge composition of all networks in a chosen Environment. This visualisation may take some time to load. Please be patient.

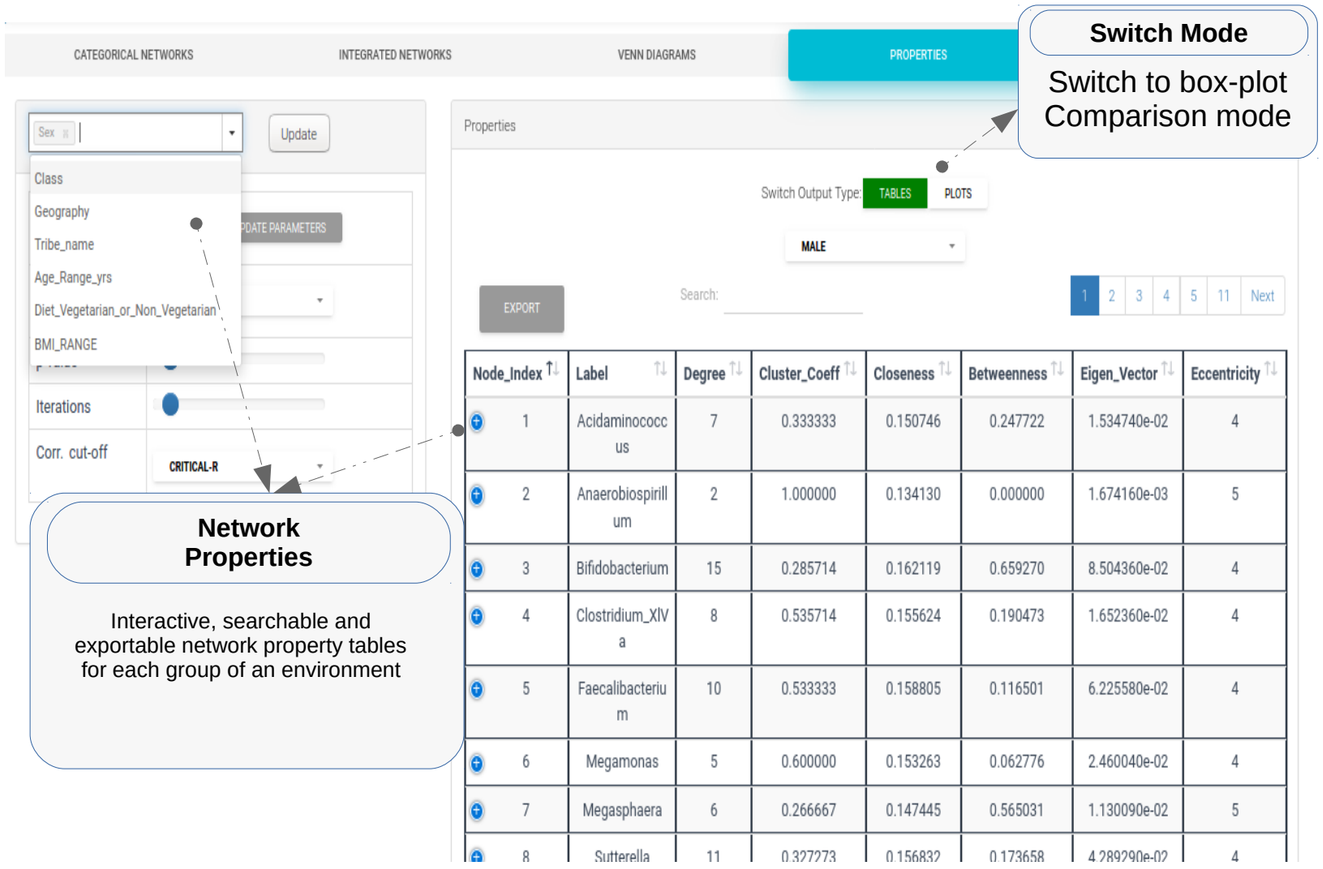


MODULE4: NETWORK PROPERTIES

This module of MetaNets allows computation and analysis of network properties (centrality measures) for each of the network in an environment using selected algorithm and associated parameters. There are two methods of analysis and visualization available:

1). Tabulated view (sortable, searchable and exportable tables)

2). Grouped Boxplots of properties for all networks in an environment, thereby enabling comparison.

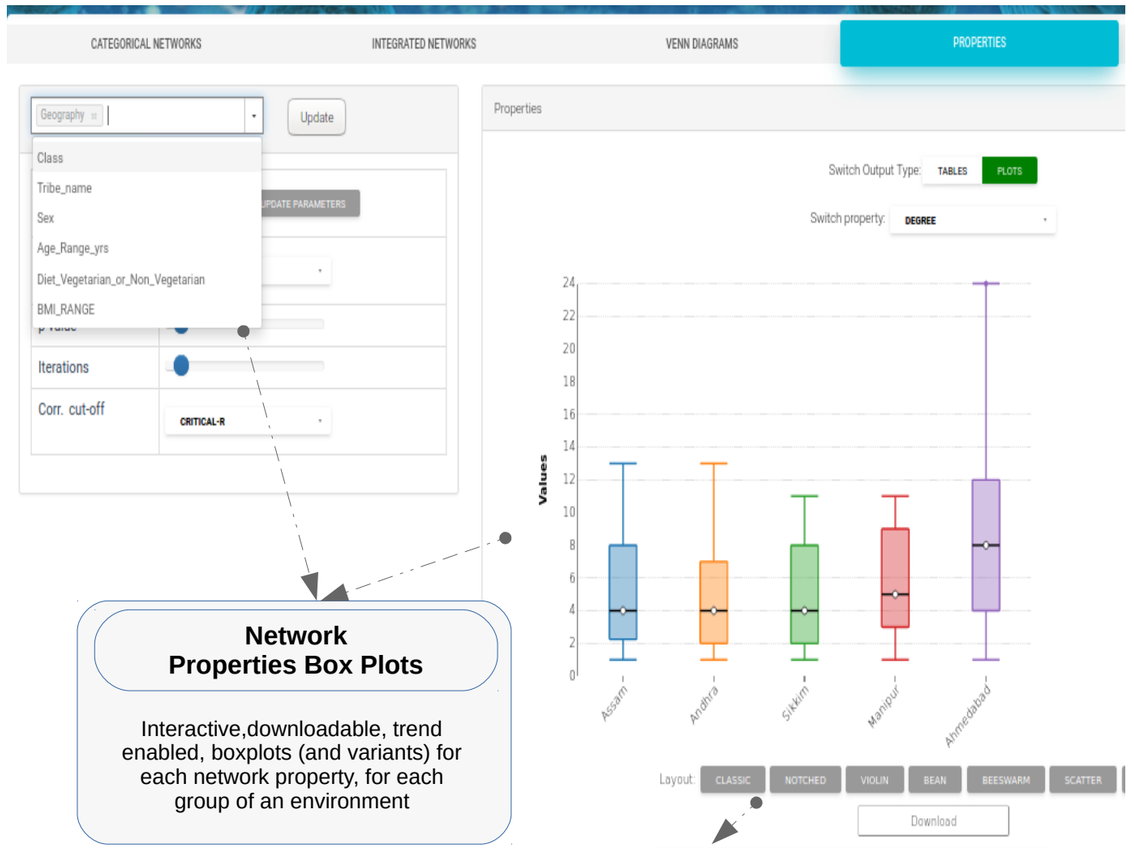


Switch Mode

Switch to box-plot Comparison mode

Network Properties

Interactive, searchable and exportable network property tables for each group of an environment



Network Properties Box Plots

Interactive,downloadable, trend enabled, boxplots (and variants) for each network property, for each group of an environment

Graph type and trend lines

Use the buttons to change graph type Or overlay trend-lines for better comparison.
Download option available as well.