# # Introduction

The GREN Mapping Initiative’s initial objective is to define a schema for the communication of network data. This can then be used as a source of NREN data for various map visualization implementations.  To ensure that the schema is sufficiently complete, compatible, and convenient for all foreseen uses, we are compiling a list of features currently offered by existing map implementations, and for near-future visualization goals.

These features are described as user stories.  They are not meant to be comprehensive descriptions of the feature, nor are they prescriptive in terms of implementation.  However, full coverage of existing and planned features is desired.

Once this list has been generally accepted by the community, we will derive data schema requirements from it.

## ## Definitions

  \* \_\_Map Viewer\_\_: NREN user, NREN administrator/provider, prospective or current NREN funder, member of the public.

  \* \_\_Site\_\_: NREN connected institution, POP, or Internet Exchange; from all participating NRENs.

## ## Consumption User Stories

### ### Sites

As a Map Viewer, I wish to see a list of Sites, represented graphically on a zoomable, geographic map, with, optionally, labels.

### ### Links

As a Map Viewer, I wish to see the intra- and inter-NREN links (physical or logical) on the map and, optionally, labels.

### ### More Information

As a Map Viewer, I wish to hover over a Site or a link and see more information about that item.  (Specifics about what information to present shall be left to each visualization implementation of the map.)  I also wish to be able to click on the item for additional information in an extended pane.  (Again, specifics left to implementation.)

### Link Disambiguation

As a Map Viewer, I wish to clearly see and distinguish between all of the links between the same two Sites, when there is more than one.

### ### Site Ownership

As a Map Viewer, I wish to identify to which NREN any given Site belongs, and also, by inference, the partner at each end of a link.

### ### Link Ownership

As a Map Viewer, I wish to see who owns, maintains, provides, and funds each link.

### ### Link Capacity

As a Map Viewer, I wish to see the capacity of each link.

### ### Link Type

As a Map Viewer, I wish to distinguish between each type of link.  Types could include circuits, logical compound links, undersea cables, satellite links, etc.

### ### NREN/Region Filter

As a Map Viewer, I wish to filter the map view to show only Sites and links associated with a single NREN, or a single region.

### ### Inter-NREN Filter

As a Map Viewer, when the above NREN filter is engaged so that only a single NREN’s Nodes and links is being shown, I wish to filter the map view to show only Sites and links that do not cross to other NRENs.  Alternatively, distinguishing those types of links from intra-NREN links is acceptable.

### ### Link Length

As a Map Viewer, I wish to see the length of the “active” (hovered or clicked) link’s physical (geographic) length.

### ### Infinite Scroll

As a Map Viewer, I wish to scroll freely east or west indefinitely, looping around the map as required.

### ### Activity Metrics

As a Map Viewer, I wish to see a graph of recent activity over a given link along with its extended information, and potentially also the most current activity level at all times.  Activity is a term that includes usage and incidents.

### ### Point-to-Point Connectivity

As a Map Viewer, I wish to select any two Sites, and be shown the primary route over which data would travel between those Sites under normal GREN/NREN configuration.

### ### Site Type Filter

As a Map Viewer, I wish to filter/highlight the list of Nodes shown to a single type/interest.  For example, filter to Internet Exchanges.  For another example, highlight research centres supporting astronomy.

## ## Administrative User Stories

### ### Default Centring

As a map visualization administrator, I wish to configure where the map is centred by default, and also the default zoom level.

### ### Link Waypoints

As a map source data provider (usually on behalf of an NREN), I wish to be able to define a custom compound line for each link, consisting of segments between intermediate waypoints.  This is to allow increased disambiguation, a geographically-acccurate path for the link, or an intentionally non-geographically-accurate logical layout.

### ### Logos/Branding

As an NREN administrator, I wish to be able to specify a font colour and logo for each label (of a Site or link).