Vision Statement
Meeting Time: Tues/Thurs 12:30 -2pm

Company Name
SmartRG

Project Title / Name (can change)
RGenius Analytics

Team name, members names/emails
RGenius

Evan Murray, Team Lead (evanmurray2@gmail.com)
Nicholas Duncan, Scribe (ncduncan@ucsb.edu)
Yash Rane (yash_rane@ucsb.edu)
Nikki Tyagi (nikitatyagi@ucsb.edu)
Wei Tung Chen (weitung_chen@ucsb.edu)

What problem the project is solving (what is innovation, the science, and new core technical advance)?
- The problem we must solve is finding new ways to analyze data collected by a network of routers and displaying the data in a way that shows the important trends and any issues that need to be addressed.
- The information this provides will provide new visual ways for the employees to assess their devices and for the customers to keep track of their own customers' usage that they don't have access to currently.
- SmartRG's information is in the cloud but behind a firewall, so we aim to add security through authentication so that they can shift their technology to True Cloud Computing, adding more flexibility and scalability.

Why the problem is important
- The dashboard will enable engineers to quickly pinpoint router problems and outages, and allow analysis of all routers which assists greatly in the development and maintenance process. This could potentially lead to new use cases and software implementations to improve the customer's experience with the routers, and improve the router's themselves. Customers can also see distribution details of the devices, including geographic and usage details.

How the problem is solved today (if it is)

- ○ Relevant Solutions
  - ■ [Corvil and LiveAction: Network Insight and Analytics](#)
    - ■ This product graphs out the network structure without an actual map underneath. We will overlay the router plots on top of a map.
  - ■ [CradlePoint: Network Device Monitoring](#)
    - ■ This product plots the network devices on an actual map, but with lots of other information written in tables. Our website will utilize graphical features like charts and time series plots to simplify that information.
  - ■ [Cisco: Router Dashboard (Detailed View)](#)
    - ■ This product lays out the details and status of a specific router, but lacks control of multiple routers in a map region. Our website will utilize an actual map and a graph structure to illustrate that.

Identify the outcome of the project
- Backend: Analyze the data from their databases and create API to be called for dashboard
- Web: Display the analytics on a cloud-based dashboard in an informative and creative way for both world and ISP views
- We will not be creating a mobile app at the time, but we could see the company creating one based on the web app in the future.

Define initial project milestones: specification, design, prototyping
- Our initial steps will be a basic implementation of an end to end prototype that can access the company's database and display some kind of data on the frontend. The research will include coming up with analytics and deciding what technologies would work best for us.

  Specification:
  - Develop modules for device analytics
  - Create a web services with user interaction
  - Display the analytics on dashboard for world and ISP perspective

  Design:
  - Mock ups of UI
  - Define API for interactions between frontend/backend
  - Define a set of initial analytics to implement

  Prototyping:
  - Successfully querying DB
  - Clean input data
  - Implement initial analytics

- Pass data to frontend and display corresponding analytics

How do you plan to articulate and design a solution
- **List the implementation platform and technologies will plan to use to develop the solution**
  - AWS, Python, React, MongoDB, Docker, chart.js, Django
- **Overview the process model you will employ to achieve the milestones**
  - Agile Development workflow