

Project Requirements

Functional Requirements

Backend

- Receive polygon data from user frontend
 - Three types of acceptable polygon data: point, box and polygon
 - Deal with point and box first, expand to polygon type later
- Create resource and task
 - Resource made up of dataset and geospatial extent
 - Send resource to Eratos primary node and aggregate task to gateway node as Post requests
 - Acceptable formats: Well known text, Well known binary and GeoJSON
- Check task state
 - The task will be completed by the Eratos gateway in its own time
 - Send Get requests periodically to enquire about task completion
 - If the task was unsuccessful, an error notification to be sent to the admin node
- Process completed task
 - If the task was successful, a success notification sent to the user node
 - Resource associated with successfully completed task shared with primary node (user frontend to fetch the completed resource from primary node separately)
- User authorization
 - Apart from processing tasks, the backend is also required to perform authorization of the user requesting the task with the Eratos primary node
 - Authorization based on Auth0 API
 - Authorization decides whether the user has permission to perform the selected task (such as if the user hasn't paid or account expired, etc.)
- Result caching and other optimizations (optional / future)
 - Several processing optimizations can be performed at the backend to reduce the number of Post and Get requests sent to the Eratos servers
 - These optimizations can cache frequently queried results or user privileges for faster processing

User Frontend

- Map Interface
 - Full Screen.
 - Can use TerriaJS or Mapbox.
 - Switch view styles: Street, Terrain & Satellite.
- Lookup and select a module (model).
 - Look up and view information on the module and its outcomes
 - Extensibility.
- Lookup and select location
 - Either search a location and/or draw a polygon for a selected area
 - Searchable locations based on administrative boundaries, places, or address lookup (polygon is automatically drawn based on boundary selected)
- Component to identify processing is occurring.

- If a payment is needed to process, the user is flagged and asked to put in payment details and confirm the purchase.
- Component notifying the processing is complete
- View and Visualise results.
 - The ability to visualise the results: table, line graph, etc...
 - Ability to filter the results
 - Ability to download results
- Account login and settings
 - Ability to log in or create an account
 - Ability to change payment details
 - Ability to view the history of purchases and downloads.

Admin Frontend

- Module Control Space (Admin operations over the modules on the system)
 - View all the modules available on the system
 - View detailed information (metadata) of a selected module
 - Add a new module to the system
 - Edit a selected module
 - Enable or disable a selected module by a toggle switch
- User information
 - View all the users on the system
 - Search for a particular user by username or full name
 - View the searched user's information
- Purchase information
 - View all the purchase transactions on the system
 - Look up particular purchases by purchase ID, date or price range
 - View the selected purchase details, such as the price paid, the cost to the process and the time of the process taken
- Third-party integrations (Nice to have)
 - User analytics (View the analytic report about a user)
 - User support

Non-functional Requirements