Collect Earth Online Desired Features List

Table of Contents

[1. DOCUMENTATION (was README.org)](#orgheadline1)

[2. INSTANCE LANDING PAGE (was Home + About)](#orgheadline2)

[3. LOGIN, REGISTER, FORGOT PASSWORD PAGES](#orgheadline3)

[4. OPERATOR PAGE (was Account)](#orgheadline4)

[5. INSTITUTION PAGE (new page)](#orgheadline5)

[6. PROJECT MANAGEMENT PAGE (was Admin)](#orgheadline6)

[7. COLLECTION PAGE (was Dashboard)](#orgheadline7)

[8. OTHER FEATURES](#orgheadline8)

# DOCUMENTATION (was README.org)

* Installation Instructions
* Configuration and Launching
* Developer Documentation
* Reporting Bugs and Requesting Features
* Tutorials and Demo
* Licenses
* Contacts

# INSTANCE LANDING PAGE (was Home + About)

* Logos
* Navbar
* Single Page Scrolling Style
* Description of CEO
* Featured Projects, Use Cases, and Past Applications
* Public List of Institutions Sorted by Activity (Site Statistics)
* Link to Tutorials (e.g., "Try Demo!")
* Disclaimers

# LOGIN, REGISTER, FORGOT PASSWORD PAGES

* Facebook/Google/Linkedin Accounts
* Email
* Password
* Automatically Add User to the Public Institution on First Registration
* Affiliations (business, university, individual)
* Avatar ([https://en.gravatar.com](https://en.gravatar.com/))
* Capture IP Address On First Registration

# OPERATOR PAGE (was Account)

* Update Account Details:
  + Facebook/Google/Linkedin Accounts
  + Email
  + Password
  + Avatar (<https://en.gravatar.com/>)
* Operator Summary Statistics:
  + Projects Worked on So Far (latest and time graph)
  + Plots Completed per Project
  + Plots Completed Total (latest and time graph)
  + Speed Score per Project
  + Speed Score Total (latest and time graph)
  + Accuracy Score per Project (based on the project's training data)
  + Accuracy Score Total (latest and time graph)
* Project List: (click entries to jump to collection page)
  + Public Projects (w/ featured projects highlighted)
  + Private Projects from Affiliated Institutions (label w/ institution)
  + Make New Project (redirect to project management page)

# INSTITUTION PAGE (new page)

* Institution Management:
  + List of Affiliated Institutions (label with user or admin role)
  + Make New Institution
* Show/Hide Information by Institution:
  + Name
  + Logo
  + Description
  + Institution Summary Statistics:
    - # Users
    - # Projects
    - #/# Projects Active or Complete
  + User Management: (only if institution admin)
    - Affiliated Users (see and update user roles)
    - Pending Affiliation Requests (see and approve)
    - Invite Users
    - Ban Users (see current list and add new banned users)
  + Project Management:
    - List All Projects (label as featured/public/private for everyone, update label if admin)
    - List Users by Project (see and add/remove users if admin)
  + White Label Management:
    - Select from a list of landing page templates
    - Customize the title, background image, logos, and text
    - Associate this landing page with a unique URL suffix (fao -> <http://ceo.sig-gis.com/fao>)
    - Add request affiliation button (redirects to login and sends request to institution page)
  + Image Servers:
    - List All WMS Feeds (see and update featured/public/private permissions if admin)
  + Social Media Integration:
    - Canned Tweets and Facebook posts with Institution Stats
    - Automatically post to Twitter and Facebook when a new featured project is created

# PROJECT MANAGEMENT PAGE (was Admin)

* Design Project Mode:
  1. Specify Name and Description
  2. Select AOI:
     + Click-and-Drag on the Map
     + Type Name into Gazetteer (provide country boundaries to all users)
     + Upload Polygon (CSV, KML, SHP, GeoJSON)
     + Import Fusion Table ID
  3. Specify Record Attributes:
     + Spatial Distribution: (include tooltips)
       - Random
         * Plot Size (radius, width)
         * Plot Shape (circle, square)
         * Number of Plots
         * Minimum Distance between Plots
         * Minimum Distance from AOI Boundary
       - Systematic/Tile Grid
         * Plot Size (radius, width, sample resolution)
         * Plot Shape (circle, square, hexagon)
         * Layout

Distance between Plot Centers

Use Pre-Defined Grid (3x3, 5x5, 7x7, 9x9)

* + - * Import Locations (CSV, KML, SHP, GeoJSON) with centroid and shape attributes
        + Auto Generate AOI Boundary
    - Validation Set Construction:
      * Assign Users to be Trainers for this Project
      * Define % of Plots to Use (or Use All Completed Plots from the Assigned Trainers)
      * Specify How Many Times to Sample Each Training Plot
  1. Entity Level
     + Sample Data Collection Mode:
       - Spatial Distribution: (include tooltips)
         * No Sample Points (only show/modify record-level attributes)
         * Single Center Point (DO WE NEED THIS?)
         * Random

Sample Size (radius, width)

Sample Shape (circle, square)

Number of Samples

Minimum Distance between Samples

Minimum Distance from Plot Boundary

* + - * + Systematic/Tile Grid

Sample Size (radius, width, sample resolution)

Sample Shape (circle, square, hexagon)

Layout

Distance between Sample Centers

Use Pre-Defined Grid (3x3, 5x5, 7x7, 9x9)

* + - * + Import Locations (CSV, KML, SHP, GeoJSON) with centroid and shape attributes

Auto Generate Plot Boundary

* + - Mapping Mode (User-Driven Object Identification):
      * Allowed Shapes:
        + Point
        + Line
        + Polygon
    - Specify Attributes: (allow assigning shortcut keys to each attribute)
      * Land Cover (Single Attribute Assignment)
      * Use Templates (e.g., Anderson LU/LC Categories)
      * Use Collect Web (Multi-Attribute Assignment - <http://openforis.org/collect/editSurvey.htm>)
  1. Select Basemap Imagery: (allow selecting multiple imagery sources per project)
     + Define Time Period
     + Choose Data Source:
       - Google Maps
       - Bing Maps
       - Digital Globe (SEPAL project could fund if necessary and we could get a good deal)
       - Yandex <https://tech.yandex.com/>
       - Here <https://developer.here.com/>
       - PlanetLabs
       - Spot World Heritage (not sure if this exists as a served image collection or just download only)
       - WMS Feeds (all public feeds + private feeds from affiliated institutions)
       - Google Earth Engine Modules: (stored on EE Rest Server)
         * LANDSAT
         * SENTINEL
         * Custom Equations:

Search for changes between two images (i.e., dynamically produce difference layers)

* + - * Sepal Modules (stored on Sepal Rest Server)
  1. Optionally Add GEE Panels to the Collection Interface: (scripts stored on EE Rest Server)
     + Charts:
       - Aggregate Panel
     + Sample Statistics:
       - Min, Max, Median, Mean, Stddev, Variance
     + Spawn Panel Button:
       - Selection of EE charts/Imagery (allow labeling panels as "Show in Other Window")
  2. User Administration:
     + Possibility to pre-assign records to one or more operators (allow multiple users per record)
* Review Project Mode:
  + Show Name, Description, and AOI/Record/Entity/Imagery Assignments per Project
  + Project Summary Statistics:
    - # Users
    - #/# and % Samples Completed
    - Sampling Quality and Quantity by User
    - Overall Quality Score
  + Download All Sample Data:
    - CSV
    - KML
    - GeoJSON
    - Fusion Table
    - SAIKU's database format (coordinate with Stefano)
  + Export Project as Schema and Data Files in Collect Mobile Format (coordinate with Stefano and Daniel)
  + Overview Maps: (use dropdown menu to select what plot value is shown)
    - Sampling Status (green = complete, yellow = partially complete, red = incomplete)
    - Sample Values (pick an attribute and show its most commonly assigned value per plot)
    - QA/QC Values (show user performance per plot)
  + Clone Project Button -> Switch to Design Project Mode and Pre-populate Form Fields
  + Close Project Button -> Disable Sampling
  + Delete Project Button -> Archive Project
  + Import/Export Projects Buttons (to move them between instances)
  + Merge Project Button -> Prompt for Second Project and Combine AOI, Records, Entities, Imagery, and Panels

# COLLECTION PAGE (was Dashboard)

* Minimize logos and navbar to a small single line at the top of the screen
* Show Basemap Imagery w/ Attribution (including Date) and Standard Map Elements and Interactions
* Show AOI Boundary, Plot Boundaries, and Sample Points
* Sidebar: (float over a full screen map like in ecodash and surface-water tools)
  + Assess Next Plot Button
  + No-Data for Plot Button (replaces Flag Plot As Bad)
  + Save Assignments
  + Do Later Button (persist attribute information entered thus far but mark plot as incomplete)
  + Quit Button
  + Render Record Level Attributes as Form Fields (use tabs if too much info)
  + Render Sample Level Attributes as Form Fields (use tabs if too much info)
  + Enable (and Show) Shortcut Keys
  + Toggle Basemap Imagery (use radio buttons)
  + Button to Push Current Plot and Sample Points to Google Earth KML Server
  + Show Selected EE Panels (use tabs if too much info)
  + Button to Open a New Window Containing Extra EE Panels
  + User Timer (count up)
  + User Statistics:
    - #/# and % Plots Completed
    - Current Accuracy Score (based on the project's training data)
  + Go back to old plots:
    - Choose from a Record History List (include Record ID)
    - Dynamically Show Completed Plots in the Map Interface and Allow Click Selection
  + Heads Up Digitizing of Points, Lines, and Polygons

# OTHER FEATURES

* Installer for ready to run Collect Earth Online (InstallBuilder)
* Google Earth Network Link
* Street View Integration
* Mobile CSS styles
* Public CEO API (?)