1. **Introductions**
   * 1. Who are the best point of contacts for:
        1. project coordination
        2. administrative questions
        3. finance
        4. R & D leads
        5. Others?
   1. **Analysis and Discussion from GRITS 1**
      1. What worked well
      2. What didn't work well in terms of workflow/project management/deadlines/expectations etc.
      3. How can we improve
   2. **Project Management Strategies**
      1. Project meetings and communication
      2. Waffle Board Introduction for ProMED, DTRA, and partners
      3. Discussion of best approach for ProMED task management
   3. **Planned Expansion of Capabilities for GRITS 2 Major Milestones**
      1. Build BSVE interface to GRITS with the SDK
      2. Build mechanisms to crowd source annotations
      3. Expand diagnostic capability to arbitrary data feeds
      4. Connect GRITS to EIDR and Mantle
      5. Crowd source improvements to the GRITS media diagnostic tool
      6. Connect GRITS diagnostic data filtering to the BSVE
      7. Enrich diagnostic dashboard with dynamic visualizations
      8. Forecast disease emergence spatially
   4. **Analysis and Discussion of Selected SOW tasks (see following pages)**
      1. Review and discuss
   5. **Project Timeline & Work Plan (see attached matrix and below)**
      1. Review and amend as necessary
   6. **Project Risk Analysis** 
      1. Identify risks throughout discourse (mitigation plan to follow meeting)
   7. **Q & A about Potential Subcontracts and Work Plans**
   8. **Adjourn Meeting**

**ISID Discussion Points**

1. Discuss appointing a liaison on ProMED’s side for better communication between EHA and ProMed.
   1. This person would check in every other week with us.
2. Discuss ProMED taking on larger role in user testing
3. Expanding and translating ontologies
   1. process for collaborating effectively
   2. waffle
4. Discuss the possibility of using GRITS as an automated *correspondent* for ProMED. GRITS would identify potential EID threats from surveillance streams and send them to ProMED for evaluation. ProMED would provide feedback on the articles and evaluation of the feed. This would provide us with a structured testing method.
   1. Perhaps ProMED could appoint someone to work specifically on this
   2. Discuss the possibility of using GRITS as an automated *moderator* for ProMED.
      1. Is there some subset of emails ProMED receives that it would be acceptable to share with GRITS?
      2. GRITS could provide an initial evaluation of the email and a ProMED moderator could provide feedback on its performance.
5. How are we going to better integrate GRITS into ProMED
   1. timeline for presence on their website
6. All tasks on the Subcontract (see below)
7. Karissa provide a brief summary of meeting from last week
8. What else would you like to work on in GRITS 2?

**ISID Work Plan: from ISID Subcontract Appendix**

SCOPE OF SERVICES AND CONTRACT DELIVERABLES

The subcontractor will be able to provide consultation and a mail group for disease reports, data collection, report moderating, and surveillance expertise. These deliverables will expand upon work delivered in the base contract (GRIT-ISID-FY13-1)

Services provided by the consultant will include:

**Task List**

* Curate outbreak datasets for training and testing the diagnostic model
* Assist with text processing of disease reports
* Provide expertise on disease report diagnosis
* Lead user testing efforts
* Assist with data prioritization, filtering, and visualization capabilities integrated into DTRA-funded BSVE prototypes(s)
* Provide expertise on current worldwide disease events
* Contribute to the high level planning of future GRITS features and usability
* Leverage global network to contribute to translation of ontology of terms
* Leverage global network to contribute to translation of user interface elements
* Contribute epidemiological expertise to reviewing and expanding ontologies
* Evaluate GRITS feed and work with EcoHealth to develop a structured testing method
* Leverage ProMEDS network of users to make GRITS available to a larger audience of users

**Other Requirements and Deliverables**

* A representative from ProMED is required to attend a bi-weekly consultation meeting with the EHA GRITS team unless otherwise indicated by EHA. Expected deliverables will be determined and assessed at these meetings between the EHA GRITS team and ProMED representatives.
* Assignment of a ProMED project coordinator to maintain regularly scheduled weekly check-ins with EHA GRITS team
* Creation of implementation plans within the first 6 months of the Base Year outlining plans to make GRITS widely available through ProMED’s website.
* Continual contribution of ProMED-Mail data for model training and testing
* Other deliverables will be decided and agreed upon by both parties at bi-weekly meetings

**Targeted SOW discussion**

**Data Streams and Sources**

1. EHA is currently conducting a review of existing disease surveillance systems to identify new data streams/surveillance streams
2. Discuss the possibility of applying GRITS2 to BSVE’s data streams
   1. Discuss potential accessibility of external data streams (CDC/DOD/etc.)
3. EHA and ProMED
   1. identify resources that could serve as training data for GRITS2
      1. news or other reporting related to disease events
      2. social media archives
      3. repositories of epidemiological reporting
   2. create a corpus that includes multiple diseases and events
      1. include diversity of documents that relate each event in every time stage and every location
4. Identify sources for continuous data feeds
   1. create a plan to contact: newspapers, blogs, Twitter, reporting agencies
   2. identify contacts from the group

**Multiple Article Clustering & Timeseries**

1. Investigate machine learning and event detection methods that can leverage time series data
2. Examine our existing training data and determine if time series and spatial analysis methods can be performed on the data
   1. How fine grained should analyses be? (spatial scale)
   2. Are the provided dates and places accurate or fine-grained enough?
   3. Are our extract dates and places accurate or fine-grained enough?
   4. Do we have large groups of documents that all relate to single disease events as they emerge across time and space?
      1. Assign task internally after discussion
3. What metrics should we use to evaluate success of this extraction
   1. what metrics are helpful to DTRA?
   2. what metrics are helpful to ProMED?
   3. other potential users?
4. Use case cluster / outbreak data to train
5. Examine overall grouping over time to identify disease clusters
   1. multifactor analysis over time
      1. determine scaling for appropriate VV & E testing
   2. include space and time variables into formula
6. Find matching sentences on parallel text, if rare instance mentioned around that date, it can determine time
   1. One possible shortcoming is that there may be a lot of noise with this approach (ex: influenza)
   2. Identify methods to reduce noise
      1. can we filter out things that are already diagnosed and suspected?
         1. we have to quantify prevalence of symptoms and establish baseline
            1. best places for these numbers (ProMED)?
         2. this may take years of data

**Ideal Scope of Distribution for GRITS**

1. Investigate public access options: can we raise the profile of GRITS and get constructive feedback by offering a useful version of the product to the public at large?
2. Have a key to sign up and users can explore functionality
3. Make it open source
   1. making it public now could cause complications. We drew criticism (extra locations, wrong diagnosis). We won’t be able to get a level of accuracy without this feedback.
   2. get it to the point where it is useful to people
4. Create blog entries with case studies to help market
5. Back predict existing outbreaks. This will help market its usefulness and also will be valuable to training.

**POTENTIAL SUBCONTRACTOR TASKS**

**BRAINSTORM NOTES:**

* role in improving testing setup
  + We would like a large number of in-browser and no browser running on external test server that checks every time code is checking in or merged
* Contribute work on network graph integration- flight network data. (roads etc). get data sets in the same formats so they can be easily used
* Corpus curation- web scraping and ingesting
  + writing adapters to get text off pages
  + scraping sites everyday
    - use of Diffbot?
* Assist with DevOps work
* A focus on expanded visualizations such as:
  + case count visualizations
  + epi curve generation
* Help with Infrastructure and Data Store
  + has done some light work on this in the past, specifically in the creation of a tool that can show uncertainty in the data. Consider continuing this work and create a deadline for it.
* All tasks on the Subcontract (see below)

**SUBCONTRACTOR WORK PLAN:**

**Subcontract Appendix**

SCOPE OF SERVICES AND CONTRACT DELIVERABLES

The subcontractor will be able to provide technical expertise in network modeling, natural language processing, text analysis, software development, and data visualization. These deliverables will expand upon work delivered in the GRITS 1 contract.

The consultant will be expected to work with EcoHealth Alliance or independently to complete the following tasks. Please refer to the Statement of Work for additional information on each task.

|  |  |
| --- | --- |
| **Tasks (Please refer to the SOW )** | **Subcontract Projects** |
| Task 1: Connect GRITS Girder database to the BSVE (Base Period) | * Create API key generation and assignment infrastructure for GRITS * Connect Girder data storage to API key infrastructure * Incorporate feedback from the BSVE team into GRITS API * Generate documentation for API access |
| Task 2: Develop recommendation and decision support capabilities (Base Period) | * Connect recommendation system to API |
| Task 3: Connect GRITS diagnostic and text-mining APIs to the BSVE (Base Period) | * Connect diagnosis and text-mining to API infrastructure * Write documentation on diagnosis and text mining APIs for BSVE team * Incorporate feedback from the BSVE team into GRITS API |
| Task 4: Build BSVE interface to GRITS with the SDK (Base Period) | * Obtain and review SDK documentation from BSVE * Develop backend component to access GRITS API * Set up mechanism for BSVE users to authenticate and/or register with GRITS * Develop frontend component to allow submission * Develop frontend component to provide diagnosis and dashboard links * Coordinate with BSVE to deploy application |
| Task 6: Incorporate disease network graphs to assist diagnostics (Base Period) | * Develop geographic, ecological, and transportation network graphs * Develop information network graph * Build graph visualizations with Tangelo * Develop tool to identifies ‘blind spots’ in the information network |
| Task 8: Expand diagnostic capability to arbitrary data feeds (Option Year 1) | * Build a submission interface for users to submit arbitrary feed * Integrate article-processing pipeline with a translation service to process non-English articles in near real time. |
| Task 10: Update diagnostic model in near real time (Option Year 1) | * Research distributed training and incremental retraining algorithms |
| Task 14: Generate disease summary reports from diagnostics (Option Year 1) | * Create algorithms for generating statistics (e.g., case counts) and visualizations (e.g., epidemic curves) to include in the summary report. * Integrate diagnostic filtering to identify data sources for the summary report |
| Task 15: Forecast disease emergence (Option Year 1) | * Build and implement a mathematical model of disease emergence that incorporates GRITS networks * Create and implement a geo visualization for GRITS dashboard |

**Other Requirements and Deliverables:**

* A representative from Subcontract will be required to attend a meeting with the EHA GRITS team once a week unless otherwise indicated by EHA. Expected deliverables will be determined and assessed at the weekly meeting between the EHA GRITS team and Subcontractor representatives.
* Subcontract contributors will be required to use Waffle.io for project management and keep up to date with the GRITS Waffle Board managed by the EHA GRITS team. They are expected to complete Waffle tasks assigned to them according to milestones and timelines set at weekly meetings.