CyberWay Annual Report Form

The following table is a copy of the annual report form on <http://www.research.gov>. Please fill in the form and return it together with supplement documents (if any) to Dr. Ziheng Sun ([zsun@gmu.edu](mailto:zsun@gmu.edu)). Dr. Sun will organize and combine them into one report for Professor Di’s review before the final submission.

Index

[**Accomplishments - What was done? What was learned?** 2](#_Toc524536510)

[**Products** 4](#_Toc524536511)

[**Participants & Other Collaborating Organizations - Who has been involved?** 5](#_Toc524536512)

[**Impact - What is the impact of the project? How has it contributed?** 6](#_Toc524536513)

[**Changes/ Problems** 9](#_Toc524536514)

**Accomplishments - What was done? What was learned?**

If there is nothing significant to report during this reporting period, please check "Nothing to Report" if applicable.

\* Required fields

Top of Form

* **\* What are the major goals of the project?** Characters Remaining: **8000**

more information about major goals of the project

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
| From OMS Tech’s perspective, the major goals are to successfully integrate the EartCube BCube components into the CyberWay architecture, allow them to be reusable, and to provide appropriate documentation as to how they are used. The components to be provided by OMS Tech include:   * Broker (provided by CNR to BCube) * Web Crawler (provided by NSIDC) * Service Status Checker (provided by FGDC to BCube) |

* **\* What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?**  more information about what was accomplished under these goals
  + Major Activities: Characters Remaining: **8000**
    - Configuration of the Service Status Checker for integration into the CyberWay architecture, as well as write documentation for its use.
    - Research into the reuse of the BCube Broker and its configuration for integration into the CyberWay architecture.
    - Instantiation and building of the Web Crawler in order to test it and integrate it into the CyberWay architecture.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

* + Specific Objectives: Characters Remaining: **8000**
    - Publish the endpoints, custom client code, and documentation for use of the Service Status Checker.
    - Publish the endpoints, custom client code (based on API), and documentation for use of the Broker.
    - Publish the endpoints, custom client code, and documentation for use of the crawler.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

* + Significant results: Characters Remaining: **8000**
    - The Service Status Checker has been tested and custom client code is being written, along with user documentation.
    - The Crawler is being instantiated and configured for testing.
    - An open source EarthCube broker has been identified as an option for the CybereWay project.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

* + Key outcomes or Other achievements: Characters Remaining: **8000**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

* **\* What opportunities for training and professional development has the project provided?**

more information about opportunities for training and professional developmentmore information about opportunities for training and professional developmentNothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* How have the results been disseminated to communities of interest?**

more information about how the results have been disseminated to communities of interestNothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What do you plan to do during the next reporting period to accomplish the goals?**

more information about what you plan to do during the next reporting period to accomplish the goalsNothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* Achieve the specific objectives stated previously.
* Assist the CyberWay team in the successful integration of all components and documentation.

Bottom of Form

**Supporting Files**

You may upload pdf files with images, tables, charts, or other graphics in support of this section. You may upload up to 4 pdf files with a maximum file size of 5 MB each.

Top of Form

Bottom of Form

 **Please select a file.**

 Description (required if uploading a file). Please provide a description of the content contained in the attached file.

**Products**

**(Ziheng to all: please list your products here in any way you want. I will sort out them later. )**

**Submit New Product(s)**

Select the type of product you want to add to your report or upload multiple products using BibTex file.

Select Product:

Book

Book Chapters

Invention

Journal or Juried Conference Paper

License

Other Conference Presentation / Paper

Other Product

Other Publications

Patent

Technologies and Techniques

Thesis / Dissertation

Website

Top of Form

--OR--

Nothing to report

Bottom of Form

**Supporting Files**

You may also upload PDF files with images, tables, charts, or other graphics in support of this section. You may also upload up to 4 PDF files with a maximum file size of 5 MB each.

Top of Form

Bottom of Form

 **Please select a file.**

 Description (required if uploading a file). Please provide a description of the content contained in the attached file.



### **Participants & Other Collaborating Organizations - Who has been involved?**

For NSF purposes, for separately submitted and awarded collaborative proposals, the PI should report progress on his/her institution's portion of the collaborative effort only.

In each of the subsections below, note which collaborators or contacts are involved in data contribution and/or management.

Top of Form

* \* Required fields
* **\* What individuals have worked on the project?**

Show

Bottom of Form

per page

PAGE: 1 of 1

| [**Name**](https://reporting.research.gov/rppr-web/rppr?d-7822565-p=1&d-7822565-o=2&d-7822565-s=0&execution=e1s6) | [**Most Senior Project Role**](https://reporting.research.gov/rppr-web/rppr?d-7822565-p=1&d-7822565-o=2&d-7822565-s=1&execution=e1s6) | [**Nearest Person Month Worked**](https://reporting.research.gov/rppr-web/rppr?d-7822565-p=1&d-7822565-o=2&d-7822565-s=2&execution=e1s6) | [**Status**](https://reporting.research.gov/rppr-web/rppr?d-7822565-p=1&d-7822565-o=2&d-7822565-s=3&execution=e1s6) | [**Previous Participant**](https://reporting.research.gov/rppr-web/rppr?d-7822565-p=1&d-7822565-o=2&d-7822565-s=4&execution=e1s6) | **Actions** |
| --- | --- | --- | --- | --- | --- |
| Di, Liping | PD/PI |  | Missing informationMissing information | -- | [Edit details](https://reporting.research.gov/rppr-web/rppr?execution=e1s6&_eventId=editParticipant&participantId=0) |
| Bromwich, David | Co PD/PI |  | Missing informationMissing information | -- | [Edit details](https://reporting.research.gov/rppr-web/rppr?execution=e1s6&_eventId=editParticipant&participantId=1) |
| Kinter, James | Co PD/PI |  | Missing informationMissing information | -- | [Edit details](https://reporting.research.gov/rppr-web/rppr?execution=e1s6&_eventId=editParticipant&participantId=3) |
| Yu, Genong | Co PD/PI |  | Missing informationMissing information | -- | [Edit details](https://reporting.research.gov/rppr-web/rppr?execution=e1s6&_eventId=editParticipant&participantId=2) |

PAGE: 1 of 1

Show

 per page

 **\* What other organizations have been involved as partners?** Nothing to report

 No organizations entered.

 **\* What other collaborators or contacts have been involved?** more information about other collaborators or contacts

List any other people or organizations involved in the project that were not separately reported as participants or partner organizations.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **2000**

**Impact - What is the impact of the project? How has it contributed?**

INSTRUCTIONS - This component will be used to describe ways in which the work, findings, and specific products of the project have had an impact during this reporting period.

For NSF purposes, include, where appropriate, discussion of data resources and the acquisition of data skills. Include the emergence of new career paths, such as data scientists, or new disciplines.

If there is nothing significant to report during this reporting period, please check "Nothing to Report" if applicable.

more information about other collaborators or contacts

Top of Form

\* Required fields

* **\* What is the impact on the development of the principal discipline(s) of the project?** more information about the impact of the development of the principal discipline

Describe how findings, results, techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research and/or pedagogical methods in the principal disciplinary field(s) of the project.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on other disciplines?**

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on the development of human resources?**more information about the impact on the development of human resources

Describe how the project made an impact or is likely to make an impact on human resource development in science, engineering, and technology.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on physical resources that form infrastructure?**

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on physical resources that form infrastructure, Including physical resources such as facilities, laboratories, or instruments.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on institutional resources that form infrastructure?**more information about the impact on institutional resources that form infrastructure

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on institutional resources that form infrastructure,

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on information resources that form infrastructure?**more information about the impact on information resources that form infrastructure

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on information resources that form infrastructure,

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on technology transfer?** more information about the impact on technology transfer

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* What is the impact on society beyond science and technology?** more information about the impact on society beyond science and technology

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world.

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

Bottom of Form

**Changes/ Problems**

**INSTRUCTIONS -**

The PI is reminded that the grantee is required to obtain prior written approval from the awarding agency grants official whenever there are significant changes in the project or its direction. See agency specific instructions for submission of these requests.

If not previously reported in writing to the agency through other mechanisms, provide the following additional information or state, "Nothing to Report", if applicable:

\* Required fields

**Notifications and Request**

For more information on Grantee Notifications to and Requests for approval from the National Science Foundation, please visit the Notifications and Requests section in FastLane or refer to Exhibit VII-1 of the Proposal & Award Policies & Procedures Guide (PAPPG).

Top of Form

* **\* Changes in approach and reasons for change** more information about changes in approach and reasons for change

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* Actual or Anticipated problems or delays and actions or plans to resolve them** more information about actual or anticipated problems or delays and actions or plans to resolve them

Nothing to report

Characters Remaining: **8000**

* The broker planned to be used in this project was the broker used for the BCube project. This broker is a non-open source component supplied by the National Research Council of Italy (CNR). The instance of this broker used for BCube has stopped functioning without a way to restart it. We have tried for about 4 months to communicate with CNR to try to resolve this issue, but without success. There are two options to move forward with; 1) use the GEO Discovery and Access Broker (GEO DAB), and 2) use the Hyrax broker from the current EarthCube Balto project. The GEO DAB provides all the functionality that the BCube Broker did, plus new functionality that may prove to be advantageous to the CyberWay project; however, it remains closed source. The Hyrax Broker is open-source and is available to be used by us for the CyberWay project, but does not have all the functionality of the GEO DAB. These options are currently being researched.
* **\* Changes that have significant impact on expenditures** more information about changes that have significant impact on expenditures

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* Significant changes in use or care of human subjects** more information about significant changes in use or care of human subjects

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* Significant changes in use or care of vertebrate animals** more information about significant changes in use or care of vertebrate animals

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

* **\* Significant changes in use or care of biohazards** more information about significant changes in use or care of biohazards

Nothing to report

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  | |  |  | | --- | --- | |  |  | |  | |
|  |
|  |

Characters Remaining: **8000**

Bottom of Form