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4150-45

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Announcement of Requirements and Registration for "Health Data Platform Metadata Challenge"

AGENCY: Office of the National Coordinator for Health Information Technology, HHS

Award Approving Official: Farzad Mostashari, National Coordinator for Health Information Technology

ACTION: Notice

SUMMARY:

As part of the HHS Open Government Plan, the HealthData.gov Platform (HDP) is a flagship initiative and focal point helping to establish learning communities that collaboratively evolve and mature the utility and usability of a broad range of health and human service data. HDP will deliver greater potential for new data driven insights into complex interactions of health and health care services. To augment the HDP effort, seven complementary challenges will encourage innovation around initial platform- and domain-specific priority areas, fostering opportunities to tap the creativity of entrepreneurs and productivity of developers.

The "Health Data Platform Metadata Challenge" requests the application of existing voluntary consensus standards for metadata common to all open government data, and invites new designs for health domain

specific metadata to classify datasets in our growing catalog, creating entities, attributes and relations that form the foundations for better discovery, integration and liquidity.

The statutory authority for this challenge competition is Section 105 of the America COMPETES Reauthorization Act of 2010 (Public L. No 111-358).

DATES: Effective on June 5, 2012. Challenge submission period ends October 2, 2012, 11:59 pm et.

FOR FURTHER INFORMATION CONTACT: Adam Wong, 202-720-2866**;** Wil Yu, 202-690-5920

SUPPLEMENTARY INFORMATION:

Subject of Challenge Competition:

The W3C has a number of standard vocabulary recommendations for Linked Data publishers, defining cross domain semantic metadata of open government data, including concept schemes, provenance, statistics, organizations, people, data catalogs and their holdings, linked data assets, and geospatial data, in addition to the foundational standards of the Web of Data (such as HTTP, XML, RDF and various serializations, SPARQL, OWL, etc). Other voluntary consensus standards development organizations are also making valuable contributions to open standards for Linked Data publishers, such as the emerging GeoSPARQL standard from the Open Geospatial Consortium.

In some cases, the entities and relations in these vocabulary standards are expressed using UML class diagrams as an abstract syntax, then automatically translated into various concrete syntaxes like XML Schemas and RDF Schemas, which also makes many of the standards from the Object Management Group easy to express as RDF Schemas, such as those that describe business motivation (including but not limited to vision, mission, strategies, tactics, goals, objectives), service orientation, process automation, systems integration, and other government specific standards. Oftentimes there exist domain

specific standards organizations, with standards products that express domain specific entities and relations, such as those for the health or environmental sectors. The Data.gov PMO has recently stood up a site to collect these standards when expressed as RDF Schemas for use by the growing community of Government Linked Data publishers, which includes HHS/CMS, EPA, DOE/NREL, USDA, and the Library of Congress.

The challenge winner will demonstrate the application of voluntary consensus and de facto cross domain and domain specific standards, using as many of the HHS datasets available on healthdata.gov as possible. There are two objectives:

1. Apply existing standards as RDF Schemas from voluntary consensus standards organizations (W3C, OMG, OGC, etc.) for expressing cross domain metadata that is common to all open government data.
2. Design new HHS domain specific metadata based on the data made available on healthdata.gov where no RDF Schema is otherwise given or available.

When designing new metadata expressed as RDF Schemas, designers should:

- Leverage existing data dictionaries expressed as natural language in the creation of new conceptual schemas, as provided by domain authorities;
- Observe best practices for URI's schemes that is consistent with existing healthdata.gov work (such as the Clinical Quality Linked Data release from HDI 2011); and
- Organize related concepts into small, compose-able component vocabularies.

Turtle syntax for RDFS and RDF is preferred. The contributed code will be given an open source license and managed by HHS on github.com, with copyright and attribution to the developer(s) as appropriate, and will ideally be used to populate vocab.data.gov.

Eligibility Rules for Participating in the Competition:

To be eligible to win a prize under this challenge, an individual or entity—

(1) Shall have registered to participate in the competition under the rules promulgated by the Office of the National Coordinator for Health Information Technology.

(2) Shall have complied with all the requirements under this section.

(3) In the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States.

(4) May not be a Federal entity or Federal employee acting within the scope of their employment.

(5) Shall not be an HHS employee working on their applications or submissions during assigned duty hours.

(6) Shall not be an employee of Office of the National Coordinator for Health IT.

(7) Federal grantees may not use Federal funds to develop COMPETES Act challenge applications unless consistent with the purpose of their grant award.

(8) Federal contractors may not use Federal funds from a contract to develop COMPETES Act challenge applications or to fund efforts in support of a COMPETES Act challenge submission.

An individual or entity shall not be deemed ineligible because the individual or entity used Federal facilities or consulted with Federal employees during a competition if the facilities and employees are made available to all individuals and entities participating in the competition on an equitable basis.

Entrants must agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from my participation in this prize contest, whether the injury, death, damage, or loss arises through negligence or otherwise.

Entrants must also agree to indemnify the Federal Government against third party claims for damages arising from or related to competition activities.

Registration Process for Participants:

To register for this challenge participants should either:

- Access the www.challenge.gov website and search for the “Health Data Platform Metadata Challenge”.
- Access the ONC Investing in Innovation (i2) Challenge website at:
    - http://www.health2con.com/devchallenge/challenges/onc-i2-challenges/
    - A registration link for the challenge can be found on the landing page under the challenge description.

Amount of the Prize:

- First Prize: $20,000
- Second Prize: $10,000
- Third Prize: $5,000

Awards may be subject to Federal income taxes and HHS will comply with IRS withholding and reporting requirements, where applicable.

Payment of the Prize:

Prize will be paid by contractor.

Basis upon Which Winner Will Be Selected:

The ONC review panel will make selections based upon the following criteria:

- Metadata: the number of cross domain and domain specific voluntary consensus and defacto standard schemas, vocabularies or ontologies that are (re)used or designed and applied to HHS data on healthdata.gov
- Data: the number of datasets that the standards based cross domain metadata and schema designed domain specific data is applied to
- Linked Data: the solution should use best practices for the expression of metadata definitions and instance data identification, leveraging the relevant open standards, including but not limited to foundational standards (RDF, RDFS, SPARQL, OWL), and other defacto vocabularies and ontologies such as those listed here as required, with the expectation that existing standards will be reused to the fullest extent possible.
- Components: leveraging software components that are already a part of the HDP is preferable, but other open source solutions may be used
- Tools: use of automation and round trip engineering that enable multiple concrete syntax realization from abstract syntax of cross domain and/or domain specific metadata is desirable, with no expectation that the tools must be open source or otherwise contributed to HDP as part of this challenge submission. Only newly designed domain specific RDF Schemas, their

composition cross domain standards based RDF Schemas, and their application to various datasets are expected to be submitted for this challenge. Tool functionality may be highlighted to explain implementations as desired.

- Best practices: where any new schemas and software code is created, they should exemplify design best practices and known software patterns, or otherwise establish them.
- Documentation: articulation of design using well known architecture artifacts
- Engagement: willingness to participate in the community as a maintainer/committer after award

Additional Information:

The virtual machines and codebase outputs from innovations demonstrated by challenge participants will be made publically available through HHS Github repositories (see https://github.com/hhs/) as release candidates for further community refinement as necessary, including open source licensing and contributor attribution as appropriate.

Authority: 15 U.S.C. 3719

Date: May 31, 2012

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Farzad Mostashari,

National Coordinator for Health Information Technology

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