

BREAKTHROUGH TECHNOLOGIES INSTITUTE

Request for Proposals [C99007-001] DG Outreach Database Development December 10, 2003

I. Overview

Breakthrough Technologies Institute (BTI) seeks a consultant to develop a web-enabled database on an open source platform. The database will consist of individuals at organizations that are involved in, or would benefit from, information about distributed generation (DG) technologies. Such a database will provide the Department of Energy with a management tool to assist in its education and outreach effort designed to accelerate the development and commercialization of DG technologies. The database will be used to track both recipients and conveyers of DG information as DOE conducts workshops, or “road shows,” as part of its outreach program.

II. Background

Working under a contract with the Department of Energy, BTI has compiled and standardized approximately 9,750 records of DG stakeholders including state, county and city officials with regulatory or policy authority, as well as private sector entities, non-profit groups, regional authorities and interested individuals. The records reside in a Microsoft Excel file.

BTI coded each record assigning a descriptive and jurisdictional value for every organization and a personal interest value for each contact. The addresses and organization names were standardized.

BTI developed a relational database using MS Access software to serve as a model in advance of the development of an online application. The database structure is comprised of 74 fields grouped in seven tables. The model consists of a data entry form permitting the user to view each record and modify existing or enter new data, and a query form to permit queries with multiple parameters. In addition, results are displayed in summary and in detail.

III. Scope of Work

BTI seeks a database developer to act as subcontractor in the fulfillment of its contract with DOE (Contract No. 3F-02122). The consultant will work with BTI in the development of the DG Outreach Database that will reside on a server selected by DOE. The server uses a UNIX platform running Linux operating system. The developer must work in MySQL in conjunction with Perl or PHP.

Task I

Develop a relational database using MySQL to allow the manipulation of data related to DOE outreach program. The database should support data entry, multiple queries, reporting, user help keys and data importing and exporting. The dataset has approximately 9,750 records and 74 fields.

The model database, as described in Section II above, provides templates for data entry forms, query form and summary and detail report views. The templates will be available for the consultant to model from. Documentation of the model is attached to this RFP for guidance purposes.

Task II

Develop user interface for the DG Outreach Database in Perl or PHP. The interface will provide full on-line functionality including data entry, querying, viewing results and downloading, importing and user help information.

The on-line database will be restricted to DOE personnel only. In addition, the consultant must program varying levels of access including, at a minimum: users who can query and obtain results and make certain notations; users who can manipulate all data; and a level of access for developers.

Task III

The application will reside on a server that runs the Linux operating system. The consultant will work with server host to meet standards for stability, performance, public access and security.

Task IV

The consultant will establish mechanisms for quality assurance and quality control for each of phase of the project.

IV. Administrative Specifications

BTI requests that parties interested in submitting proposals send an e-mail of intention to dtuft@fuelcells.org by Friday, December 19, 2003. This does not obligate a party, nor are parties who don't submit the notice of intent precluded from submitting a proposal by the deadline date.

Proposal elements

Interested parties should submit:

1. proposed work plan and time line, no longer than three pages long, addressing the project scope as outlined above;
2. cost proposal, no longer than two pages long;
3. samples of work (html or otherwise);
4. one-page roster of recent work and relevant client list;
5. one-page biographical outlines for the principal developers and key staff; and

6. no fewer than three references.

Cost proposal

Interested parties may submit a firm fixed price or time-and-materials proposal. The latter should include a range and a "best case" estimate. Please use your most favorable government rate if you are a government contractor or subcontractor.

Cost estimate should include:

1. Hourly rates including fringe benefits and G&A if applicable (including how rate is computed, and base it is applied to);
2. Number of hours committed by each key position;
3. Duties of the professionals to be compensated under this project;
4. Total compensation for each position for the total project; and
5. Other costs including licensing fees, software or materials as necessary.

Please provide any additional detail sufficient to allow the BTI to judge the reasonableness of the cost proposal.

Evaluation

Proposals will be evaluated on an objective merit review process. Aspects of the review include:

Technical proficiency as evidenced in the work plan and work samples;
Efficiency as evidenced by the time line;
Expertise as evidenced by the biographies and client list;
Customer satisfaction as reported by references; and
Cost effectiveness as understood by the cost proposal.

Eligibility

Eligible applicants for this solicitation are for-profit organizations, not-for-profit institutions and organizations, educational institutions and individuals.

The winning consultant will be a subcontractor to BTI's prime contract with U.S. Government as represented by the Department of Energy. The consultant as subcontractor must agree to terms of the underlying agreement.

Deadline and delivery

***Proposals must be received by 6:00 p.m. EST Tuesday, December 30, 2003. Deliver to:
Breakthrough Technologies Institute
1625 K Street NW, #725
Washington DC 20006
Attn: DG Database***

BTI also requests electronic format e-mailed to: dtuft@fuelcells.org

Database fields

The following outline documents the fields and proposes a structure for a relational database designed to identify recipients and conveyers of information about distributed generation. The draft architecture names, groups, and describes a total of 77 fields, or data points. Every record has a unique Record ID (counted only once) that links the information among the several files, or tables.

All fields are text fields, unless otherwise noted. Fields indicated by “check all that apply” suggest the use of a radial, check box or true/false field. Some fields are “combo-boxes” to permit drop-down lists of pre-set information. In the case of “Organization Name”, as new records are entered, additional organizations should automatically populate the pre-set, drop-down list. Input masks for other standardized information such as dates, phone numbers, zip codes, and currency should be used where appropriate.

The organizational information table (file VI) is at the center of the relationship network. It is linked to address information (file III) to account for multiple addresses for an institution. Individual contact information (file I) is linked to the address table (file III), and the phone numbers (file IV) and e-mail (file V) tables are related to the individual. Also, contact notes (file III) and interests (file VII) are linked to the individual.

File I—Individual ID

1. Data Source
2. Date Entered (mm/dd/yyyy) [automatic date input]
3. Last Updated (mm/dd/yyyy) [automatic upon change of any data]
4. Initials
5. Prefix
6. First Name
7. MI
8. Last Name
9. Suffix
10. Nickname
11. Title
12. Type (combo-box)
 - 12.1. Recipient (default)
 - 12.2. Conveyer
 - 12.3. Both

File II—Contact Notes [Each contact produces a new date and note record. This file is infinitely expandable. Available only to DOE personnel]

13. Date
14. Contact Note (memo)

File III—Address Info

15. Address_1 (permit a return keystroke for multiple lines)
16. Address_2

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Attachment 1—Data Fields

- 17. Address_3
- 18. City1
- 19. State1 (combo box)
 - 19.1. List 50 states
- 20. Zip+4(1)

File IV—Phone Info

- 21. Phone_1
- 22. Ext.1
- 23. Phone_2
- 24. Fax

File V—E-mail Info

- 25. e-mail 1
- 26. e-mail 2
- 27. URL:

File VI—Organization Info

- 28. Organization/Jurisdiction (combo box)
- 29. Organization Type1—If Government Entity (combo box--pick one that best describes)
 - 29.1. Federal
 - 29.2. State
 - 29.3. County
 - 29.4. Municipal
 - 29.5. School District/University
 - 29.6. Regional
 - 29.7. Tribal
- 30. Organization Type 2—If NGO or Association (combo box--pick one that best describes)
 - 30.1. National
 - 30.2. State/Regional
 - 30.3. Local
 - 30.4. International
- 31. Government Body (combo box--pick one that best describes)
 - 31.1. Executive Office
 - 31.2. Legislator
 - 31.3. Legislative Committee
 - 31.4. Energy Department
 - 31.5. Environment Department
 - 31.6. Public Safety Office [fire, police, health]
 - 31.7. Public Works
 - 31.8. Codes Body[building]
 - 31.9. Planning/Zoning Office [land]
 - 31.10. Public Utility/Service Commission
 - 31.11. Military

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Attachment 1—Data Fields

- 31.12. Other Department
- 32. Association (combo box--pick one that best describes)
 - 32.1. Trade [manufacturers assoc.]
 - 32.2. Professional [architects, electrical engineers, etc.]
 - 32.3. Consortium
 - 32.4. Government (governors, mayors, state legislators)
 - 32.5. Standards
 - 32.6. Customer Association
- 33. NGO (combo box--pick one that best describes)
 - 33.1. Energy
 - 33.2. Environment
 - 33.3. Consumer
 - 33.4. Labor Union
 - 33.5. Service Organization
 - 33.6. Foundation
 - 33.7. Academic
 - 33.8. Other non-profit
- 34. Media (combo box--pick one that best describes)
 - 34.1. Print-Trades
 - 34.2. Print-General
 - 34.3. Internet
 - 34.4. Broadcast/Cable
 - 34.5. Editorial/Opinion writer
- 35. Power Industry (combo box--pick one that best describes)
 - 35.1. Investor-owned utility
 - 35.2. Publicly-owned utility
 - 35.3. Rural Electric Coop
 - 35.4. Independent Power Producer
 - 35.5. Transmission Organization
 - 35.6. Reliability Council
 - 35.7. Engineer/Architect
 - 35.8. Install/Build/Repair Technicians
 - 35.9. Recycler
 - 35.10. Supplier/Manufacturer
 - 35.11. CHP Developer
 - 35.12. Legal
 - 35.13. Public Affairs/Public Relations
 - 35.14. Consultant

File VII—Interest

Record ID

Government Interest

- 36. DG general
- 37. Executive
- 38. Legislative
- 39. Regulatory

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Attachment 1—Data Fields

- 40. Police
- 41. Fire Protection
- 42. Public Safety
- 43. Building Codes
- 44. Public Works
- 45. Planning/Zoning
- 46. Health

Professional Interest, General (check all that apply)

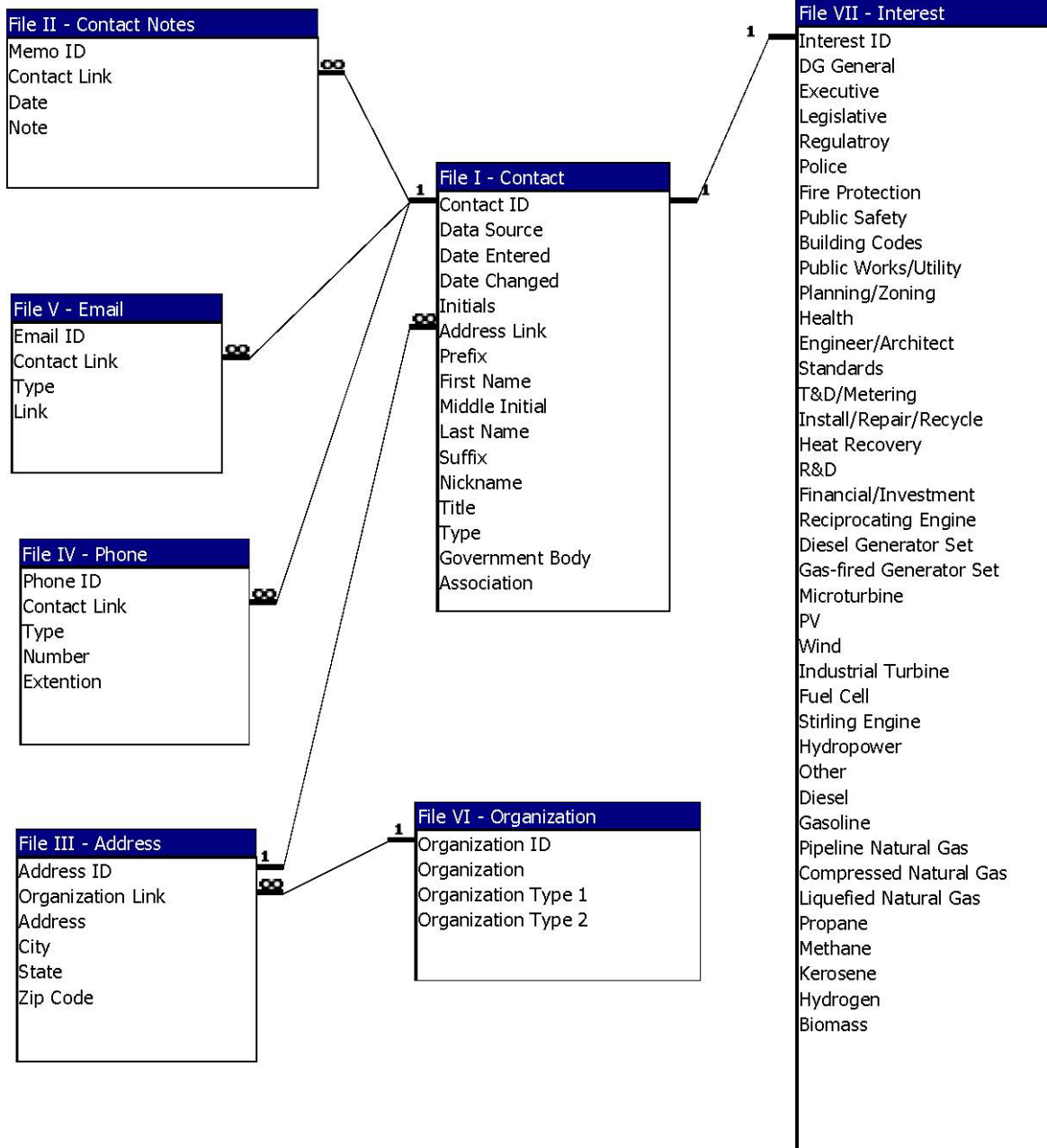
- 47. Engineer/Architect
- 48. Standards
- 49. T&D/Metering
- 50. Install/Repair/Recycle
- 51. Heat Recovery
- 52. R&D
- 53. Financial/Investment

'Prime Mover' Interest (check all that apply)

- 54. Reciprocating Engine
- 55. Diesel Generator set
- 56. Gas-fired generator set
- 57. Microturbine
- 58. PV
- 59. Wind
- 60. Industrial turbine
- 61. Fuel cell
- 62. Stirling engine
- 63. Hydropower
- 64. Other

Fuel Interest (check all that apply)

- 65. Diesel
- 66. Gasoline
- 67. Pipeline Natural Gas
- 68. Compressed Natural Gas
- 69. Liquefied Natural Gas
- 70. Propane
- 71. Methane
- 72. Kerosene
- 73. Hydrogen
- 74. Biomass



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Attachment 3—Data Entry Forms

Data Entry Forms

The model data entry form suggests, though does not necessarily determine, the final design of the web-enabled data entry forms. All the fields described in Attachment 1 must be available for manual data entry. Data entry forms should be designed to make the data entry process easily managed, understandable and efficient. Design consideration should be given to the field sequence, page layout, page sequence, and the creation of help keys. Graphic interface should include navigation tools. The Access model suggests how the web version would appear, but should not be taken to impose a particular solution.

In addition, certain if, then routines may be established for data entry:

If Organization Type I (Field 30) = government entity, then display Organization Info Public (Field 32)

If Organization Type II (Field 31) = NGO/Association, then display Organization Info Association (field 33) or NGO (field 34)

If Organization Type is neither government entity nor NGO/Association, then display Academic, Media, and Power Industry fields (fields 35-37).

Fields 35-37 are mutually exclusive. If any selection in 35-37 is made, the remaining 2 fields should be inaccessible.

Querying

The model query form suggests, though is not determinative, of the final design of the web-enabled query form. Developer will develop a query form to permit a user to select multiple fields on which to query. The form should be organized in an intuitive manner that reflects the organization of the database and the types of queries the user is likely to need. Navigation of the form should be intuitive. The division of information into sections should keep the page to a reasonable length. The main sections of the form should be: general record information, organizational identifiers, contact identifiers and geographic information, contact notes, and interest identifiers.

Examples of queries (not intended to be exhaustive):

- List all records updated last week
- List all conveyers (type="conveyer", 2 records)
- List all conveyers in Washington, Oregon and California
- List all National Fire Protection Association (source=NFPA, 38 records)
- List all ICC (source=ICC) in 6 states (RI, MA, CT, NH, VT, ME)
- Find the contact whose note I wrote last Wednesday
- Find that guy Hanson from Illinois
- How many "Firefighters" are listed (by title)
- How many "Fire chiefs" or "Fire Marshals" are listed at the state level (by title)
- List all the national professional associations (20 records)
- List all code bodies offices in Iowa (Government Body="Code Body", State="MD", 23 records)
- List all building code officials in Iowa (Government Interest)
- List all code bodies in CA who are architects/engineers (1 record)
- How many municipal code offices and officers are in 5 New England states?
- List all the state, county and municipal public safety officers who specialize in fire protection in Massachusetts.
- How many hydrogen sellers are there in the US?
- How many code offices have architects/engineers in California?
- Show all the wind and PV manufacturers in California?

The following fields must be searchable.

Record information

- Data Source
- Date Entered
- Last Updated
- Initials

Organizational Identifiers

- Company/Jurisdiction
- Organization Type1
- Organization Type 2
- Government Body
- Association
- NGO

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Attachment 4—Querying

Media
Power Industry

Contact Identifiers

Last Name
Title
Type

Contact Notes

Contact Date
Contact Note

Geographic Identifiers

City
State
Zip

Contact Interest

DG general (appears in all interest sections)

Government Interest

Executive
Legislative
Regulatory
Police
Fire Protection
Public Safety
Building Codes
Public Works
Planning/Zoning
Health

Professional Interest

Architect/Engineer
Standards
T&D/Metering
Install/Repair/Recycle
Heat Recovery
R&D
Financial/Investment

'Prime Mover' Interest

Reciprocating Engines
Diesel Generator Set
Gas Fired generator set
Microturbine
PV
Wind
Industrial Turbine
Fuel Cell
Stirling Engine
Hydropower
Other

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Attachment 4—Querying

Fuel Interest

Diesel

Gasoline

Pipeline Natural Gas

Compressed Natural Gas

Liquefied Natural Gas

Propane

Methane

Kerosene

Hydrogen

Biomass

Results and Reporting

The model results suggest, though are not determinative, of the final design of the web-enabled results. Developer will develop web-enabled result and report formats in consultation with client and consultants. A query should fundamentally return a record(s) summary and a count of records returned.

At a minimum, the summary reporting should return the following information:

Complete name

Organization

Contact Title

City and State

In addition, a user should be able to select:

- an individual record and view it in its entirety.
- a contact list with basic contact information based on that query, including name, city, state, phone, fax and e-mail.
- A address label form standard (1X4 labels)
- Export a file with e-mail addresses