VIVO

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# VIVO Roadmap

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## Process

### Creating the Roadmap

1. Collect ideas for VIVO enhancements from all sources – wiki, roadmaps, minutes, task forces, emails, implementation fests, conference presentations
2. Organize into three broad collections – end user, steward and technical
3. Review with Steering
4. Survey Community, review strategic plan, technical issues
5. Assemble task force to identify elements, next steps, possible sprints
6. Develop roadmap outline
7. Present to Leadership, Steering and Community at conference

*See https://wiki.duraspace.org/display/VIVO/VIVO+Roadmap+Process*

A roadmap survey was conducted in the VIVO community July 3-17, 2015. All results are counts of the number of respondents indicating the feature was one of their five most important. Columns represent community as a whole, results from Leadership and results from Steering. Green indicates top features. Red indicates bottom features. Check marks next to features where three groups agree the feature is a top feature. Star indicates 3+ volunteers

### Survey: End User Features

VIVO Roadmap Survey

For the end user features below, please check 0-5 features that you feel should be a priority for the next release of VIVO. Please check any number of features that you would volunteer to work on.

| End User Features | All | Leadership | Steering | |
|---|---|---|---|---|
| Improve the interface, particularly regarding person profiles -- more attractive, more focused on scholarship | 11 | 7 | 3 | ✓ |
| Provide biosketch and CV output. Extensible standard formats such as NIH, NSF, CVN, Acumen, CASRAI | 15 | 7 | 2 | ✓ |
| Ensure that VIVO profiles appear on screen in under 2 seconds | 16 | 4 | 3 | |
| Improve the interface for non-profile items -- fewer lists, more visualization, more data summary, drill down | 7 | 1 | 1 | |
| Provide one button bi-directional profile update with other VIVO systems. That is, if a profile exists in two VIVO syster | 8 | 1 | 0 | |
| Provide one button bi-directional profile update with ORCID | 11 | 5 | 2 | ✓ |
| Provide one button bi-directional profile update with Fedora | 2 | 0 | 1 | |
| Provide one button bi-directional profile update with SciENCV | 4 | 2 | 1 | |
| Provide one button upload/download of a person's works to/from BibTex | 1 | 0 | 0 | |
| Provide one button upload/download of a person's works to/from EndNote | 4 | 2 | 1 | |
| Provide one button load of meta data from Figshare | 1 | 0 | 0 | |
| Improve the manual editing interfaces -- drag and drop a presentation to a profile, a PDF to profile, a photo to profile, | 5 | 2 | 2 | |
| Support personal annotation of anything in VIVO | 2 | 1 | 1 | |
| Support grouping of anything in VIVO -- define a group, add/sub from group, show group, email group. | 1 | 1 | 0 | |
| Provide mobile interface -- VIVO should have optimized presentation on phone and tablet | 10 | 5 | 1 | |
| Provide the Duke embeddable widgets for non VIVO websites, bring VIVO content to other university sites | 7 | 4 | 4 | |
| Support social network analysis -- exports to SNA tools, simple SNA visualizations and metrics | 2 | 1 | 1 | |
| Support for research impact analysis. Ontology extensions, and outputs for gathering and using research impact data | 5 | 2 | 2 | |
| Repair/replace/augment all visualizations -- put anything with a location on a map. Put anything with dates on a timeli | 15 | 5 | 4 | ✓☆ |
| Reporting improvements -- provide a suite of 50-100 queries which are presented as finished reports in CSV and PDF | 11 | 4 | 3 | ✓☆ |
| Provide cross site search capability | 15 | 7 | 3 | ✓☆ |
| Provide a VIVO Searchlight application | 4 | 1 | 1 | |
| Provide expert finding capability, including "people like me" | 10 | 5 | 2 | |
| Provide alt metrics for scholarly works in VIVO | 3 | 0 | 1 | |
| Provide single sign on using a user's ORCID and their ORCID password. Provides opportunity to host profiles for enc | 3 | 2 | 1 | |

### Survey: Stewardship Features

VIVO Roadmap Survey

For the stewardship features below, please check 0-5 features that you feel should be a priority for the next release of VIVO. Please check any number of features that you would volunteer to work on.

| Stewardship Features | All | Leadership | Steering | |
|---|---|---|---|---|
| Simplify theming. Provide a simple theming option -- logos, color, welcome text. Provide a full theming option -- CSS ( | 11 | 5 | 1 | |
| Include ingest from DOI. From a spreadsheet and manually. | 8 | 4 | 0 | |
| Include ingest from PubMed. Given one or more PubMed IDs, add publication data including abstract, MeSH terms a | 7 | 5 | 2 | ✓ |
| Include ingest from ISBN. Given an ISBN, or a list of ISBN, use a standard data source to get attributes of the book in | 4 | 2 | 0 | |
| Ingest from NIH Reporter | 4 | 2 | 0 | |
| Ingest from USPTO | 3 | 0 | 0 | |
| Ingest from grants.gov included | 3 | 2 | 0 | |
| Ingest from clinicaltrials.gov included | 2 | 1 | 0 | |
| Enforce data integrity from ontology (cardinality, domain and range). Prevent data from entering VIVO that is contradi | 4 | 2 | 2 | |
| Provide a collection of open social plug-ins that can be augmented locally, and selected by end users at run time | 3 | 3 | 0 | |
| Provide Karma scripts for ingest with guide and training for local implementation and customization | 5 | 1 | 0 | |
| Use standard URIs, such as those from registry services, when possible, for shared entities rather than creating redu | 12 | 5 | 3 | ✓ |
| Provide data analyst interfaces for SAS, SPSS and R. Include batch processes for exporting large amounts of data in | 2 | 1 | 0 | |
| Provide standard input data sets for journals, universities, publishers, cities, dates. Possibly from WikiData. Provide a | 8 | 3 | 2 | |
| Provide dot releases of software that do not require an upgrade | 4 | 1 | 0 | |
| Provide dot releases of the ontology that do not require an upgrade | 2 | 1 | 0 | |
| Load ontology from files that are automatically generated from VIVO-ISF, replacing the manually generated files that | 0 | 0 | 0 | |
| Support technical assessment of VIVO through one button install, sample data, sample outputs, and guided tour | 9 | 4 | 2 | ☆ |
| Allow better configuration of the user interface based upon annotations on the ontology | 6 | 2 | 1 | |
| Add common local extensions into VIVO-ISF, reducing need for local extensions | 3 | 2 | 0 | |
| Provide easier mechanism for both central and local extensions of the ontology, and easy import of modules relevant | 5 | 2 | 2 | |
| Provide latitude and longitude in ontology | 2 | 0 | 0 | |
| Provide attribution ontology for indicating the role an individual played in the development of a scholarly work | 4 | 2 | 1 | ☆ |
| Provide data citation capability | 3 | 0 | 0 | |
| Provide software citation capability | 1 | 0 | 0 | |
| Provide ontology extensions for support of humanities scholarship | 6 | 4 | 1 | ☆ |
| Provide ontology extensions for support of provenance (data lineage) | 3 | 2 | 0 | |
| Provide a store (catalog) of selectable third party web apps for inclusion in the interface | 5 | 3 | 2 | |
| Support third party triple stores | 12 | 4 | 1 | ☆ |
| Provide an ingest from SHARE Notify Harvester, populating VIVO with elements from SHARE. Some sites might pop | 3 | 3 | 0 | |

### Survey: Technical Features

VIVO Roadmap Survey

For the technical features below, please check 0-5 features that you feel should be a priority for the next release of VIVO. Please check any number of features that you would volunteer to work on.

| Technical Features | All | Leadership | Steering | |
|---|---|---|---|---|
| Move to Maven | 3 | 1 | 1 | |
| Reorganize repos so that everything needed to develop and run VIVO is available from a single repo | 2 | 1 | 0 | |
| Provide software from GitHub | 11 | 9 | 2 | ✓ |
| Provide one button repo to IDE capability | 1 | 0 | 0 | |
| Move to continuous integration | 6 | 3 | 1 | |
| Move to Assembla | 0 | 0 | 0 | |
| Move to Github issues | 4 | 3 | 1 | |
| Include VIVO Vagrant with distribution | 2 | 0 | 0 | |
| Continue modularization work | 11 | 5 | 3 | ✓ |
| Continue separation of interface (view/controller) from model. Use API to pull/get data from the VIVO backend. | 11 | 4 | 0 | |
| Application plug-in capability -- provide a simple mechanism for a web app to appear in VIVO. | 4 | 2 | 1 | |
| Improve ontology extract and load | 3 | 2 | 2 | |
| Integrate ontology and software development into a single open source process | 8 | 2 | 2 | |
| Adopt a standard Javascript framework for developing future interfaces. New end user and steward features to be bui | 4 | 1 | 0 | |
| Eliminate distinction between ontologies loaded at start-up and ontologies loaded at run-time. Support only run-time | 0 | 0 | 0 | |
| Restructure code to use more information from the ontologies and store less business logic in the code | 7 | 3 | 3 | ✓ |
| Provide a standard set of APIs that simplify and standardize the use of VIVO data in other applications | 18 | 9 | 2 | ✓ |
| Provide a means for an API developer to register a new API | 6 | 3 | 0 | |
| Provide a means for a web app developer to register a new web app | 0 | 0 | 0 | |
| Remove features from the application that do not work -- visualizations, CSV ingest, others. | 13 | 4 | 0 | |
| Rewrite the custom editing forms to improve functionality and modularity | 3 | 1 | 1 | |
| Provide a binary release for developers | 4 | 0 | 1 | |
| Provide Docker as part of the standard distribution | 2 | 1 | 0 | |
| Provide coding standards and code training | 4 | 3 | 0 | |

## Elements of the Roadmap

### Standard Patterns for Ingest

Items to be Considered
- Extract from any source, transform to VIVO-ISF RDF, load to VIVO

Approach
- Identify best practices, tools, patterns fostering common methods for ingest from ORCID, PubMed, CrossRef, institutional sources
- Identify opportunities for common data (orgs, journals, concepts, other) that be used by all VIVO sites

Potential Sprints
- Common tools/practices for ingest and update
- Remove/deprecate legacy ingest mechanisms
- Software framework for developing additional ingests

### Standard Patterns for Output

Items to be Considered
- Non-RDF formats for viz, reports, CV/bioksetch, apps

Approach
- Standard/extensible API framework with configurable APIs
- Performance tuned output
- Identify chunks of data, technology choices

Potential Sprints
- Data regarding individuals
- Data for reporting – summarized and line items for consumption by reporting tools
- Data for visualizations optimized for performance

### Visualizations, UI and Theming

Items to be Considered
- Visualizations existing and future. UI/usability improvements. Theming and UI simplifications. Biosketch and CV outputs.

Approach
- Consider UI issues together. Develop architectural approach. Identify issues that can be dealt with first.

Potential Sprints
- Identify and remove items that will not be repaired
- Improve/simplify theming configuration
- Improve existing UI templates
- New/improved visualizations

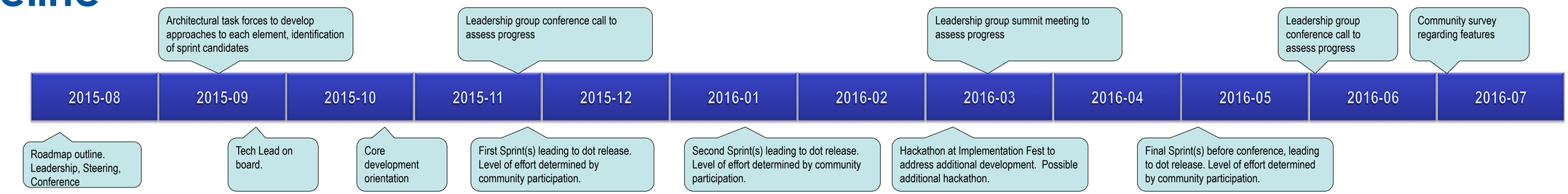
### Performance and Scaling

Items to be Considered
- Modularization, improved algorithms, changes in functionality, end user and API performance

Approach
- Incrementally rewrite data access layer
- Analyze for redundant queries
- Identify opportunities for caching and other reuse
- Limit the returned data, unless requested otherwise

Potential Sprints
- Plug and play triple stores, reasoners, search engines
- Improve queries for UI and API

## Timeline




## Additional Work

Additional work in support of VIVO is planned: 1) Install software from GitHub; 2) Remove features that do not work; 3) Improve technical assessment through standards for data ingest; 4) Optimize the repos for rapid developer start-up; 5) Incorporate contributed software in the distribution, providing additional functionality; 6) Incorporate additional ontology extensions to represent attribution/contribution, work in the humanities. As with all VIVO enhancements, volunteer effort is the key driver. If you are interested in participating the development of any feature, please contact the project director, Mike Conlon (mconlon@duraspace.org) or any member of the Steering Group. Some features to be pursued as grant opportunities include additional ontology work, use of standard URIs, and VIVO Search.