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GRID DATA Repository

Technical Committee Meeting
September 7, 2017

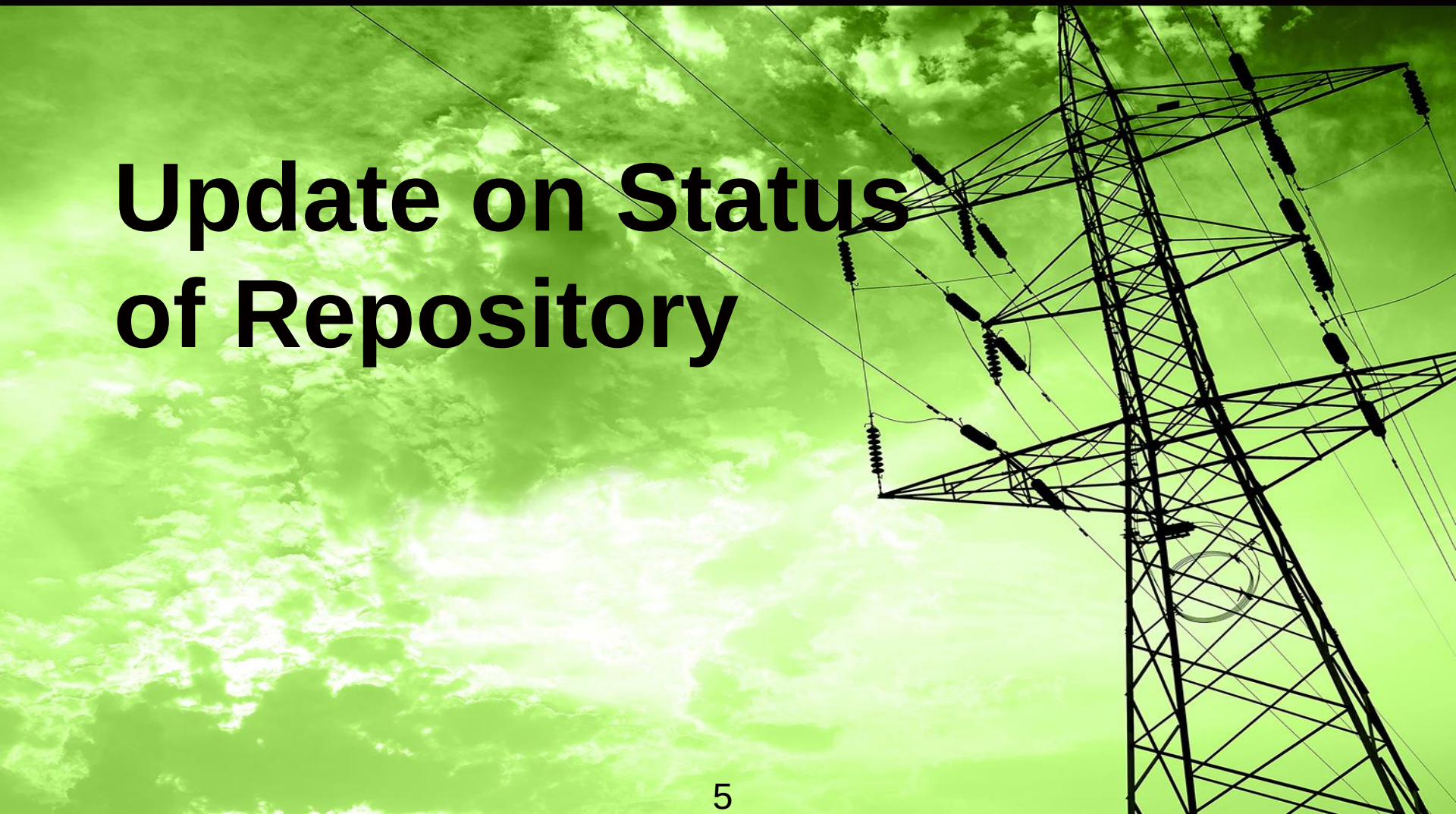
Agenda

#	Topic	Duration
1	Introductions	5 min
2	Approval of Meeting Minutes	5 min
3	Update on Status of Repository	10 min
	• Post Go Live Activities	
	• Performance Metrics	
4	Update on Phase 2	10 min
	• Requirements for Phase 2	
	• Implementation of Phase 2	
5	Next Deliverables	5 min
	• Summary of Deliverables	
	• Upcoming requests/inputs and plan for next meeting	
6	Open Committee Discussion	25 min

Introductions

Approval of Meeting Minutes from June 2017 Meeting

Update on Status of Repository



BetterGrids Repository

- **A free library** of public grid model data
- **Supporting research** in grid optimization and reliability
- Enabling grid researchers to **collaborate and share data**
- Supported by a **community of volunteers** led by GridBright
- Funded by the **DOE ARPA-E** GRID DATA Program

Post Go Live Enhancements

- Development of WordPress version of BetterGrids.org website
- Implementation of item ratings and comment system
- Publication of repository contents to online search engines (Google, Yahoo, Bing, etc)
- Implemented automatic backup
- Improved users interface

Post Go Live Status

- Operated the Repository 24x7 and provided users support
- Made incremental updates to the curation process based on UAT feedback.
- Developed data curation strategies and processes, including collection development, quality assurance, discovery and retrieval, archiving, and preservation for re-use over time
- Curated the models submitted by the community after the production Go-Live.
- Significantly expanded the number of models by proactively seeking out new models

Repository Growth

Metric	Q2, 2017	Q3, 2017
Model contributors (count)	5	5
Registerd accounts (count)	20	92
Registered curators (count)	3	3
Model collections (count)	12	12
Distinct models (count)	44	190
Model files (count)	55	630
Model files (Mb)	106	385
Downloads (count)	1,085	20,400

Tech to Market

- June Press release on availability of Repository via a press release
- Major communication campaign at the IEEE PES GM in Chicago in July
  - Announced on Power-Globe
  - Sponsored the main poster session attended by thousands of researchers
  - Message Push on IEEE Mobile App
  - Communicated at the conference sessions and working group meetings
  - Prepared and distributed BetterGrids Repository business cards

Tech to Market

- Provided a live demonstration of the Repository to the IEEE meeting attendees who were on the IEEE-sponsored Tour of the Gavin Center at Illinois Institute of Technology (IIT).

- Distributed the 3rd issue of the BetterGrids quarterly Newsletter

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Update on Phase 2

Review of Phase 2 and Phase 3

- **Phase 2:** Build the core database used for the semantic searching and integrate it with phase 1. This should include some initial converters from common model formats to load the database that supports the semantic searching.
- **Phase 3:** Build the semantic searching capability using models loaded into the repository including extended user interface components. The search capability available through the new user interface satisfies the semantic search objectives of the project.

Phase 2 Functional Requirements

Req ID	Description	Status
P2-Func-01	When files are uploaded into repository, convert GridLabD models into common model format and load into model database.	In Scope Phase 2
P2-Func-02	When files are uploaded into repository, Convert MatPower models into common model format and load into model database.	In Scope Phase 2
P2-Func-03	When files are uploaded into repository, Convert IEEE CDF models into common model format and load into model database.	In Scope Phase 2
P2-Func-04	When files are uploaded into repository, Convert PSS-E models into common model format and load into model database.	In Scope Phase 2
P2-Func-05	When files are uploaded into repository, Convert PSLF models into common model format and load into model database.	In Scope Phase 2
P2-Func-06	Change model submission process so that files are uploaded at the beginning of the process so that they can be parsed and used for the auto-generation of metadata.	In Scope Phase 2
P2-Func-07	Auto-generate and pre-populate metadata from models that are loaded for submission. Auto-generated metadata includes: # of buses, # of generators, # of feeders, # of loads, model format, and model format version.	In Scope Phase 2
P2-Func-08	Enable model curators to download an export of the model in JSON format for additional evaluation.	In Scope Phase 2
P2-Func-09	Enable users to download an export of the model in JSON format for additional evaluation.	In Scope Phase 2

Phase 2 Use Cases

- New Model Upload (Revised)
  - Revised to run converters to load into semantic search database and pre-calculate metadata from model files
- Model Review by Curator (Revised)
  - Metadata includes pre-calculated values as well as submitter entered
  - Can download JSON export from semantic search database
- Model Download (Revised)
  - Can download JSON export from semantic search database

Phase 2 Implementation

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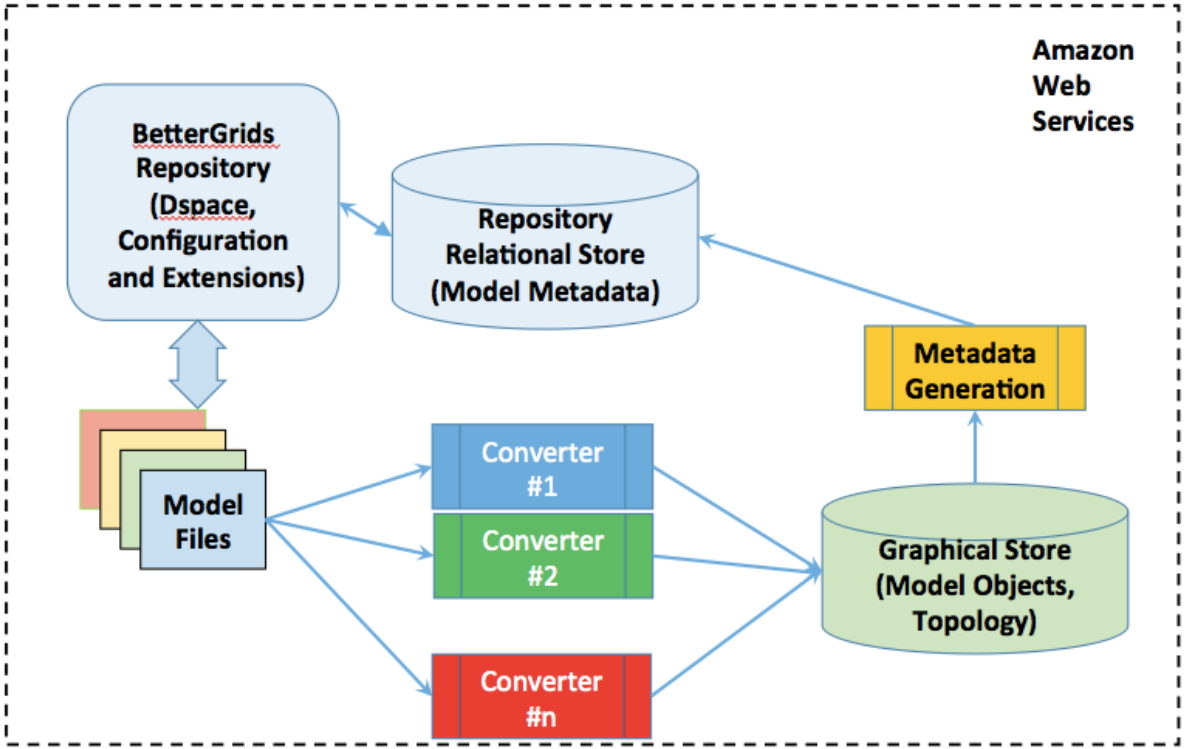
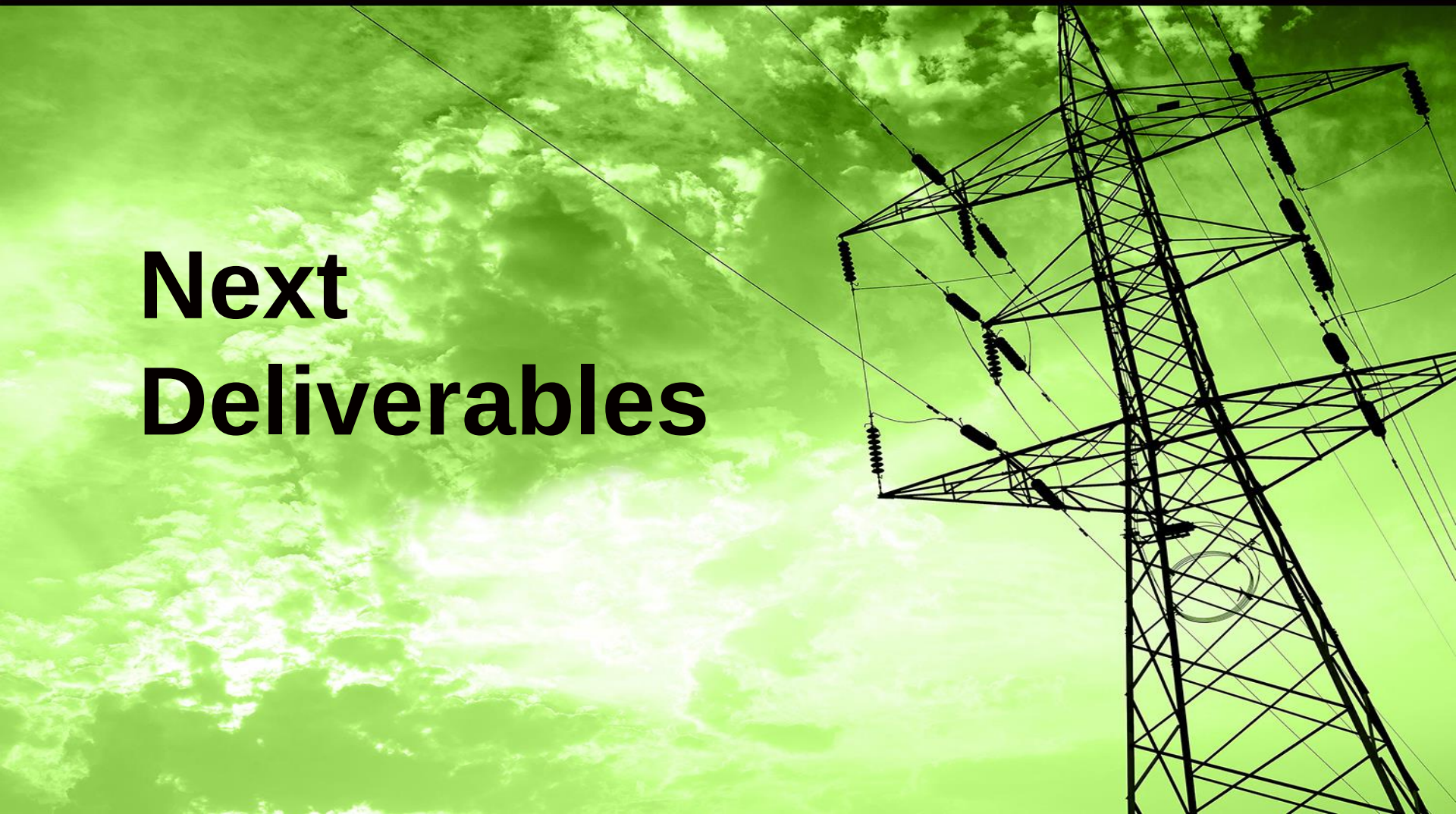


Phase 2 Status and Summary

- Developed the Requirements for Phase 2 and incorporated comments from the Technical Committee and other Reviewers
- Making good progress on integrating semantic search capabilities



Next Deliverables

Upcoming Technical Deliverables

- All to be Completion before end of 2017:
  - Phase 2 repository ready for UAT
  - Phase 2 repository accepted
  - Phase 2 Go-Live
  - Phase 3 requirements finalized

Upcoming Requests to Committee

- Review Phase 3 Requirements
- Volunteers to Assist with UAT

Feedback and Discussion

Possible Extensions & Services

- Integration with GitHub or other Git based repositories for the purposes of easily managing actively evolving models.
- Expand the APIs for automated the publishing models, retrieving models and querying repository metadata. This would enable users to develop add-ons to the repository.
- Extensions to visualize models in the repository without downloading them.
- Extensions to run validation algorithms automatically.
- Pre-packaged integration with multiple simulation tools so that co-simulation studies can be performed without installing and setting up simulation environment.
- Integration with model conversion tools.
- Provide new model conversion tools and services.
- Identify the information needs of grad student researchers and expand the repository (with items or links) to time series scenarios, telemetry event patterns, models that simulate exception conditions, lists of test cases, etc. What do they need?
- Expand the repository to hold publications, poster project results – the poster image, the raw data used, the algorithms/code, the result sets, the paper write-ups, etc. Categorize the poster efforts to enable searching.

Open Discussion & Other Topics

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Open Committee Discussion