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Software Requirements Specification: Multi-scale Epidemiological and Economic Simulation and Analysis (MESA) Scenario Bank

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Scenario Bank Discussion

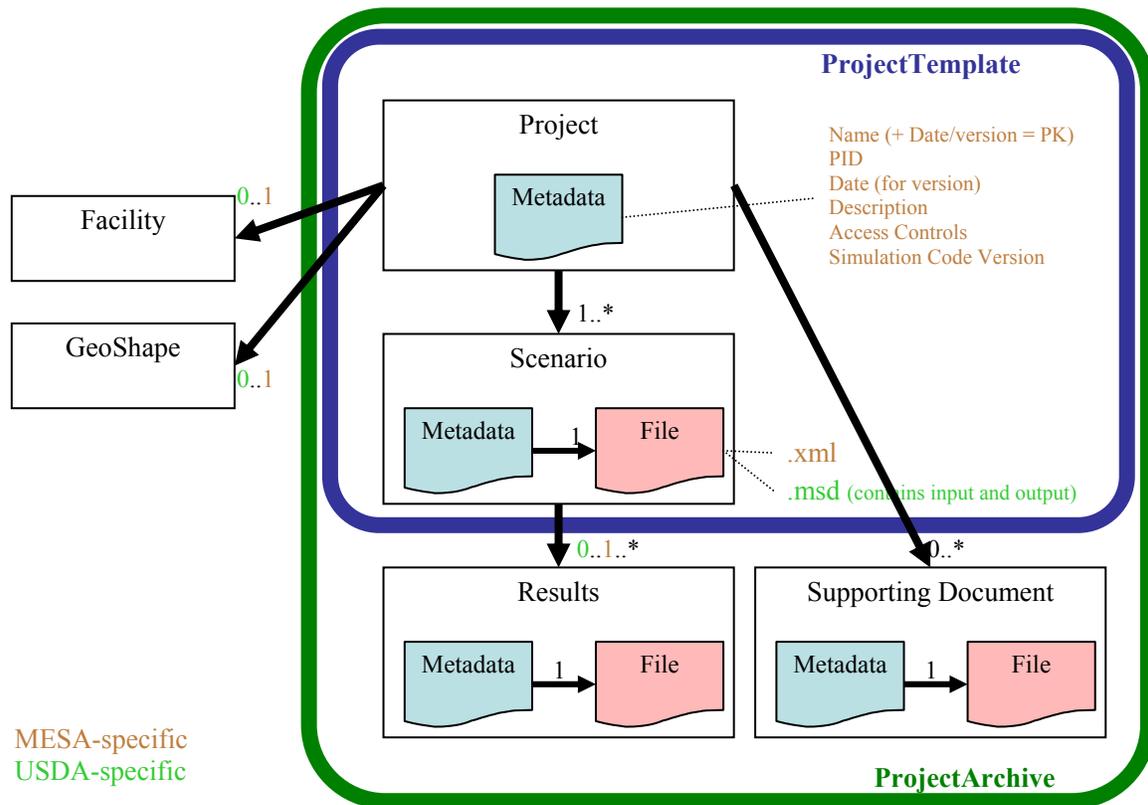
Revisions discussed September 25, 2006

Attendees (alphabetical): T. Dahlgren, S. Hazlett, D. Sloan, and S. Smith

This document builds on the discussion notes from September 21, 2006. It provides a summary of the ideas relating to the scenario bank tables and their associated requirements.

1 Scenario Bank Table Overview

Two conceptual groupings were identified for the contents requirements of the scenario bank. The first, called **ProjectTemplate**, shall consist of <Project, Scenarios, and Miscellaneous Files> groups. The second, **ProjectArchive**, shall consist of groups of <Project, Scenarios, Results, and Miscellaneous Files>. The figure below illustrates the multiplicity of the associations between the different tables, with color coding used to distinguish between current MESA (brown) and USDA (light green) requirements.



Scenario bank tables are shown in black with their general contents specified within the box. The metadata associated with each table is expected to include database key information as well as relevant timestamps. Each *File* is expected to be a file with an arbitrary format.

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At present there are no files associated specifically with *Project*, though there could be a configuration file. (*Q: Is this correct?*)

It is important to note that the .msd files kept by the USDA contain both the input and output from a given scenario.

A key change over discussions prior to September 21st is the association of arbitrary, user-specified *Supporting Documents* with the project rather than individual scenarios. The exception is files associated simulation results, which are clearly scenario-specific.

2 Scenario Bank Requirements

For both *ProjectTemplate* and *ProjectArchive*, the following common requirements hold:

- *Projects* shall be versioned by a date field; and
- *Supporting Document* files can include analyses of results on a *Project* and/or *Scenario* basis.

2.1 *ProjectTemplate*

Preliminary, high-level requirements associated with *ProjectTemplates* are:

- Create a new project template;
- Retrieve a template based on project information;
- Display sets of project templates matching metadata search criteria;
- Update an existing project template;
- Copy an existing project template;
- Copy a scenario;
- Remove a scenario from a project;
- Add supporting document file(s) to a project;
- Remove a specified supporting document file from a project;
- Add supporting document file(s) to a scenario; and
- Remove a specified supporting document file from a scenario.

2.2 *ProjectArchive*

Preliminary, high-level requirements associated with *ProjectArchive* are:

- Create a new project archive;
- Retrieve a project archive;
- Display sets of project archives based on matching metadata search criteria;
- Add supporting document file(s) to a project¹ in the archive;
- Add supporting document file(s) to a scenario¹ in the archive;
- Add a scenario set to the archive;
- Remove a scenario set from the archive;
- Update a scenario set, *unless explicitly forced* reject the request if the results are the same but the scenario is different;
- Remove a supporting document file from a project in the archive;

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- Remove a supporting document file from a scenario in the archive;
- Copy the project and associated scenarios for use as a *ProjectTemplate*;
- Copy a scenario for use as a *ProjectTemplate scenario*.

2.3 General Requirements

In addition to the above requirements, the following additional high-level requirements shall be enforced:

- A web-based user interface shall be provided to populate and manage *ProjectTemplates* and *ProjectArchives*;
- An application program interface (API) shall be provided for use by alternate user interfaces (or front-ends);
- Access to *ProjectTemplates* and *ProjectArchive* shall be restricted to pre-determined group(s) of users;
- Permission to change the group associated with scenario bank datasets shall be restricted;
- The software shall run on Linux or Windows platforms; and
- The tables shall be implemented in Oracle.

3 Assumptions

The following assumptions are made regarding *Facility* and *GeoShape* datasets:

- Once the dataset(s) are added, they cannot be modified (so long as there exists at least one *ProjectArchive* is dependent upon them); and
- Any updates to the dataset(s) will result in a completely new dataset with a new ID (key).

4 Agenda Items for Future Meetings

The following items were left for future meetings

- Was the code version supposed to be stored by *Project* or *Scenario*?