March 10, 2011

RITA's Research, Development & Technology Knowledge Management System

Alasdair Cain, Transportation Specialist, RITA Research, Development, & Technology Office

The Research, Development, and Technology (RD&T) Knowledge Management System (KMS)

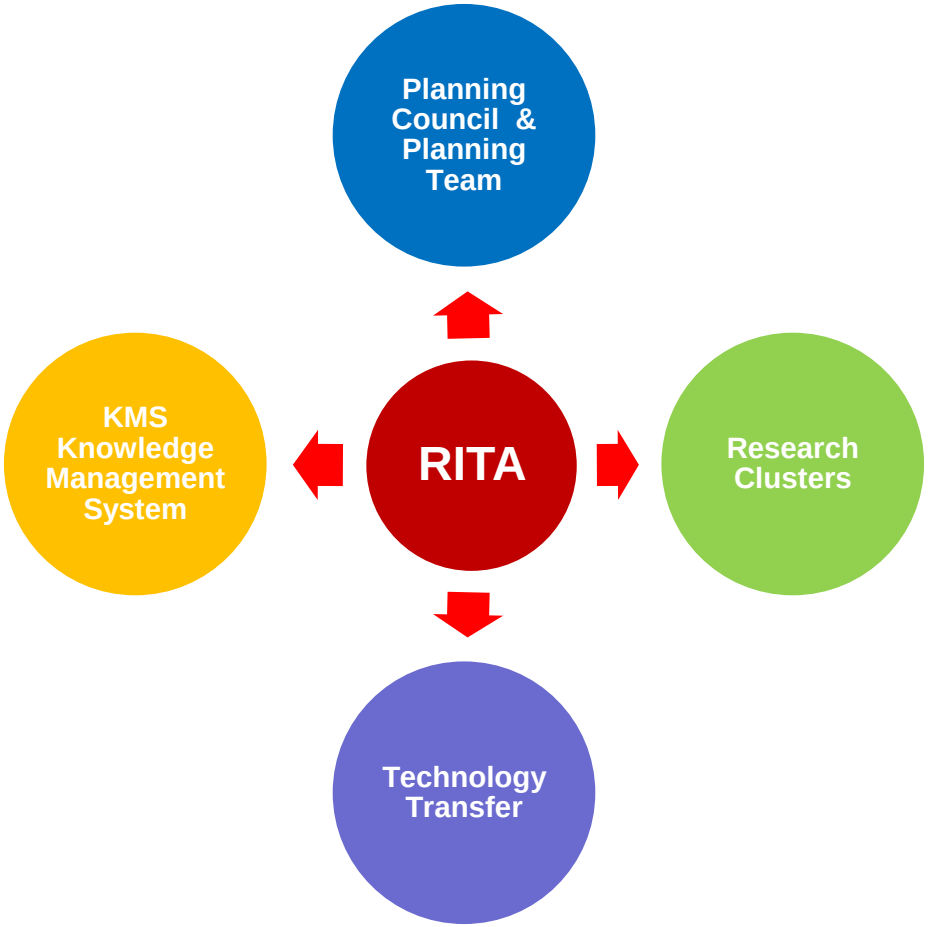
By Alasdair Cain,
Office of Research, Development, and Technology

March 2011

RITA's Research Coordination Activities

RITA Research Coordination Efforts are comprised of:

- **Senior – level consultations through Planning Council & Planning Team**
- **Working – level consultations through the Research Clusters**
- **Project – level visibility into RD&T spending through the Knowledge Management System**
- **Sharing of research outcomes and outputs through Technology Transfer**



The RD&T Knowledge Management System (KMS)

What is the KMS?

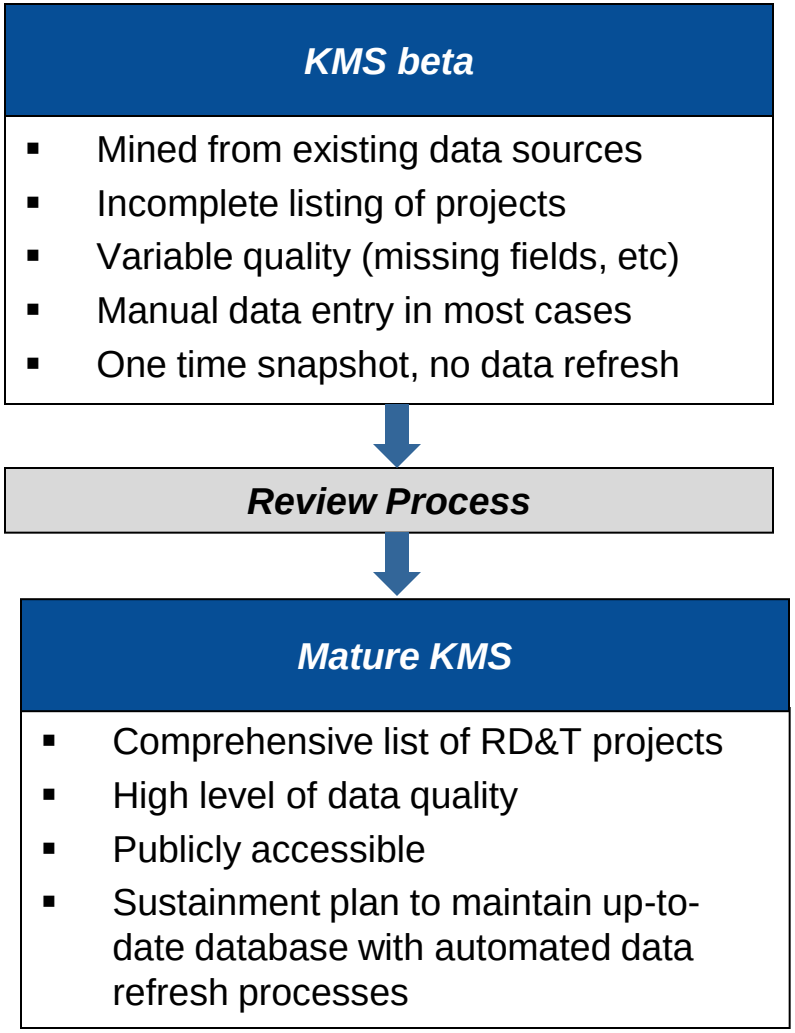
- A ***publicly available***, web-based, searchable database of DOT-funded RD&T project records
- A central information repository populated by existing DOT agency data sources
- Field structure:
  - Project title
  - Program
  - Short description/abstract
  - Project sponsor and performer POC details
  - Project status (active, completed, etc)
  - Funding amount
  - Project findings and outcomes (reports/patents/rulemaking /new technologies, etc.)

Why do we need it?

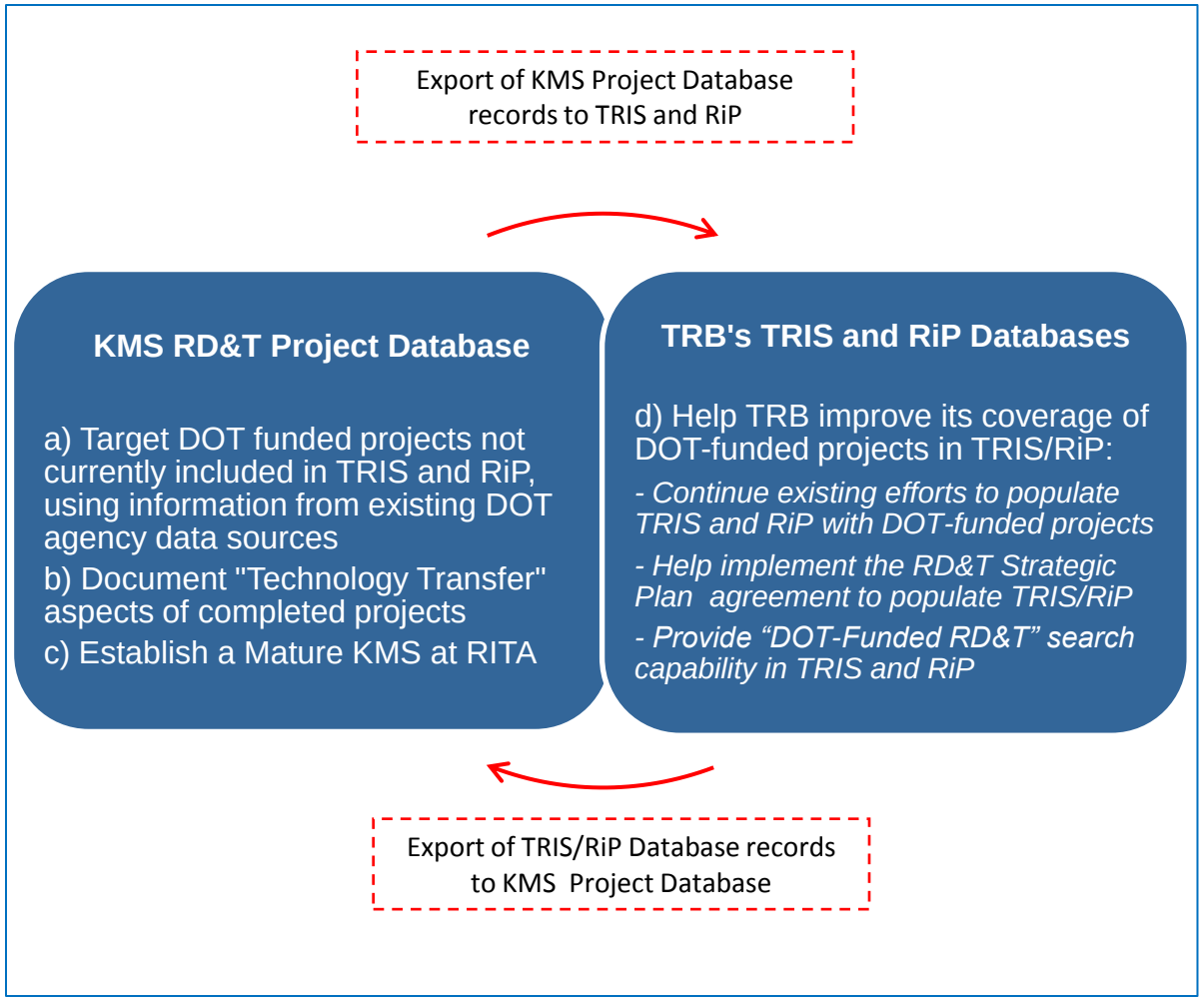
- Assist RITA in its research coordination, facilitation, and strategic planning efforts
- Facilitate knowledge sharing and leverage opportunities for cross-modal collaboration across DOT
- Provide DOT staff with a tool to quickly answer requests from external stakeholders for information on RD&T programs and projects
- Foster research coordination and collaboration across federal and state government, academia, and industry
- Enhance RD&T funding transparency in support of the Administration's Open Government initiative
- Congressionally mandated

KMS Approach

- Summer 2010 - Build KMS beta:
  - Volpe Center contracted to build KMS beta
  - Content provided by DOT operating administrations, supplemented by data from other sources like TRB
  - Currently contains over 3,000 active RD&T projects and projects completed after 9/30/2008 , (new content still being added)
  - Accessible to all DOT HQ staff at: http://152.122.19.223/kms/
- Fall 2010 - Review Process:
  - Internal review by DOT staff (Oct/Nov)
  - External review by expert panel (Nov)
  - Develop KMS Evaluation Report (Nov/Dec)
- 2011 – Establish “mature” KMS:
  - Review KMS Evaluation Report and reach consensus on next steps
  - Migrate KMS to DOT HQ
  - Establish long-term database maintenance and sustainment approach
  - Coordinate with TRB’s existing databases



Coordination with TRB's Databases



RITA U.S. Department of Transportation
Research and Innovative Technology Administration

RD&T KMS Home | About KMS Beta | Data Information

RITA > RD&T KMS Home

Data as of September 24, 2010

- **The Research, Development, and Technology (RD&T) Knowledge Management System (KMS)**

A searchable database of Department of Transportation RD&T projects

RD&T KMS Beta version

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Guided Search
Power Search
Cluster Search

Keyword: SEARCH

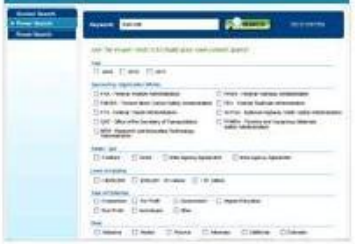
The ***RD&T KMS Beta Version***
This beta version represents the first phase of the ***RD&T KMS***. It is populated with information on active RD&T projects and projects completed after September 2008. The project information was provided by DOT operating administrations, supplemented by information from other sources such as the Transportation Research Board. We would like you to review this beta version and let us know what you think. We will use the feedback you provide to help us develop the mature version of the ***RD&T KMS***. Potential comment areas include:

- Do the different search functions allow you to retrieve the information you need quickly and accurately?
- Are there any RD&T projects currently missing from the database that need to be added?
- Are there any additional database fields that you think should be added?
- Is there anything in the database that you think should not be there, or that should not be made available to the public?
- Is there any repeated/duplicative information that needs to be deleted?

3 Ways to search the RD&T KMS

Guided Search

Power Search



Cluster Search

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▶ Guided Search

Power Search

Cluster Search

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Filter By

Projects Active in Year

2011 (1156)
2010 (2151)
2009 (2248)
2008 (1429)
2007 and prior (691)
Year Unknown (425)

Sponsor

FAA (223)
FHWA (675)
FMCSA (24)
FRA (152)
FTA (285)
NHTSA (74)
PHMSA (60)
RITA (1704)

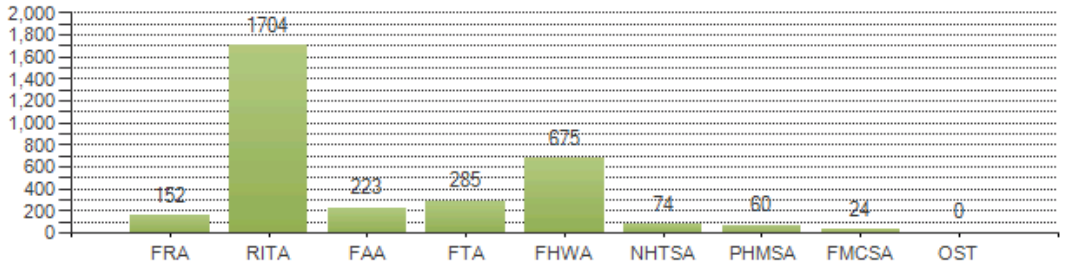
Level of Funding

Under 500,000 (2277)
500,000 to 1,000,000 (308)
Greater than 1,000,000 (324)
Funding Unknown (288)

State

AK (214)
AL (93)
AR (4)
AZ (1)
CA (296)
CO (32)
CT (8)
DE (51)
FL (88)
GA (53)

Project Counts by Sponsoring Organization



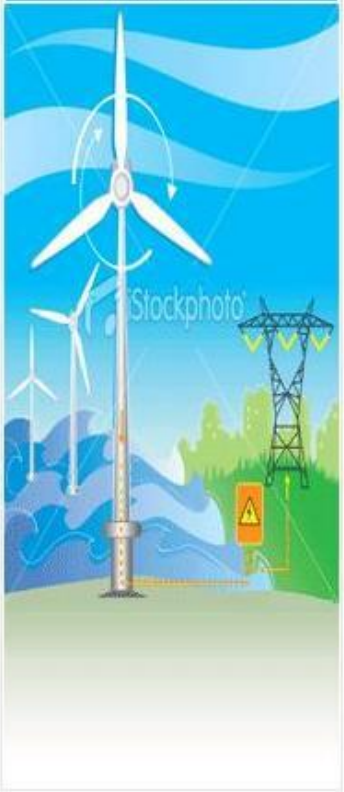
Search Results

Project Title	Sponsor	Performer	Start Year	End Year
07 Remote Infrared Audible Signage	FTA	Central Puget Sound Regional Transit Aut	2010	
2010 Ohio River Basin Transportation Rate Update	RITA	University of Tennessee, Knoxville (NTRC)	2010	2010
3rd Infantry Division Highway	FHWA		2010	2011
A GPS-Based Survey of Freight Movements in the Midwest Region	RITA	University of Illinois, Chicago	2010	2011
A New Graduate Course in Transportation Infrastructure Finance in the Civil Engineering Department at Texas A&M University	RITA	Texas A&M University, College Station	2010	2011
A Novel Approach to Mitigating Ballast Fouling and		University of Wisconsin,		

Guided Search

▶ Power Search

Cluster Search



Keyword: SEARCH

Use the Power Search to build your own robust query!

Projects Active in Year (Select All | Deselect All)

☐ 2010 ☐ 2009 ☐ 2008 ☐ 2007 and prior ☐ Year Unknown

Sponsoring Organization (Select All | Deselect All)

☐ FAA - Federal Aviation Admin.
☐ FHWA - Federal Highway Admin.
☐ FMCSA - Federal Motor Carrier Safety Admin.
☐ FRA - Federal Railroad Admin.
☑ FTA - Federal Transit Admin.
☐ NHTSA - National Highway Traffic Safety Admin.
☐ OST - Office of the Secretary of Transportation
☐ RITA - Research and Innovative Technology Admin.
☐ PHMSA - Pipeline and Hazardous Materials Safety Admin.

Award Type (Select All | Deselect All)

☐ Contract ☐ Grant ☐ Inter-Agency Agreement
☐ Intra-Agency Agreement ☐ Cooperative Agreement ☐ No Award Type

Level of Funding (Select All | Deselect All)

☐ Under 500,000 ☑ 500,000 to 1,000,000 ☐ Greater than 1,000,000 ☐ Funding Unknown

Type of Performer (Select All | Deselect All)

☐ Non-profit ☐ Private Industry ☐ University ☐ Federal Research Lab ☐ Government

State

Alabama
Alaska
Arizona
Arkansas
California

> <

Status (Select All | Deselect All)

☐ Active ☐ Completed

GO!

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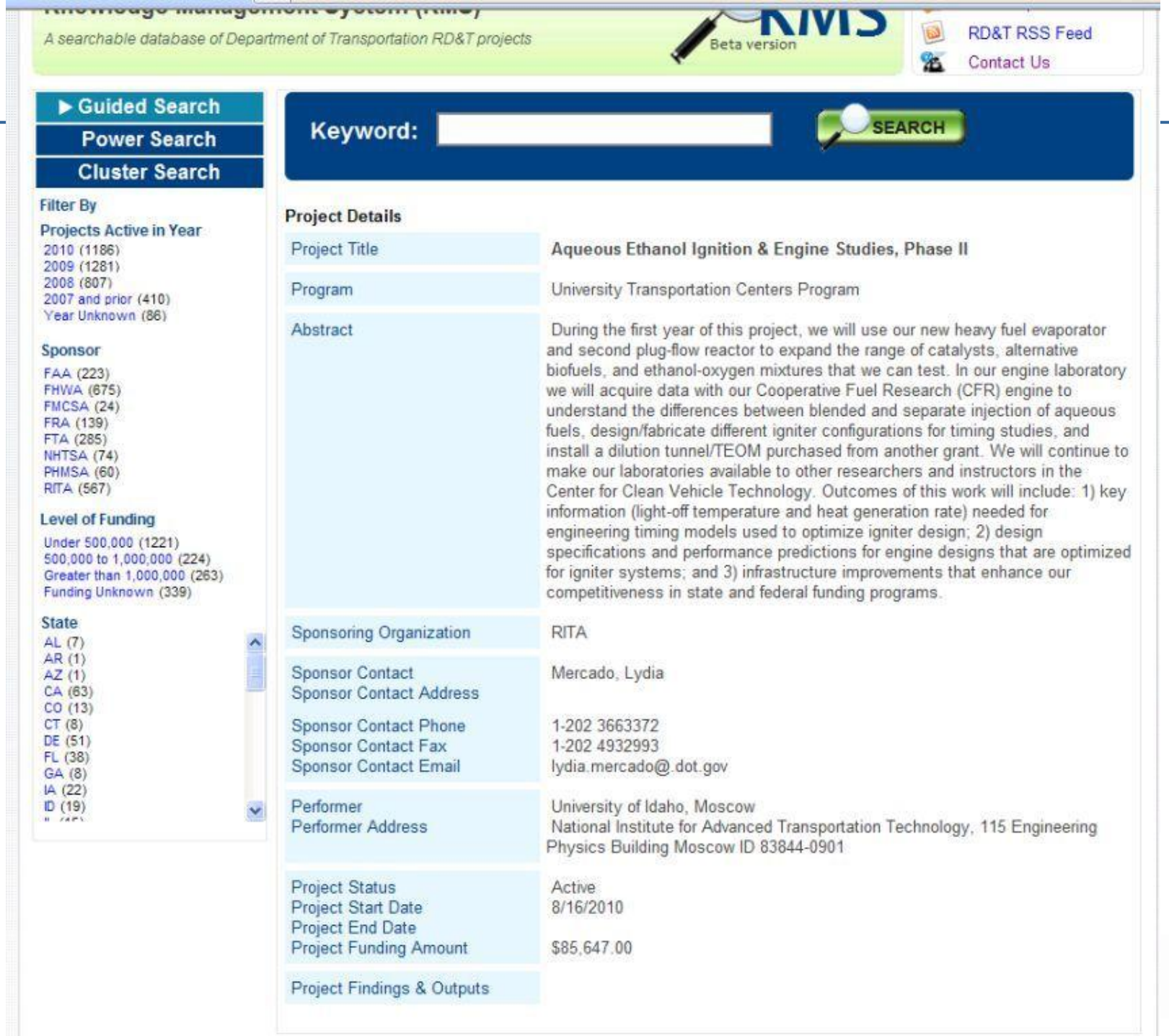
Guided Search

Power Search

▶ Cluster Search

Search by DOT Research Cluster

- Infrastructure & Materials
- Human Factors
- Energy Sustainability
- Risk-Based Analysis to Address Safety Issues
- Data Driven Decision Making
- Multimodal Intelligent Transportation Systems
- Livability
- Modeling & Simulation
- Positioning, Navigation & Timing
- Transportation Implication For an Aging Population and Those with Special Needs
- System Resilience & Global Logistics
- Policy Analysis
- Travel Behavior
- Economics



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A searchable database of Department of Transportation RD&T projects

KMS Beta version

RD&T RSS Feed

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Power Search

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Keyword: SEARCH

Filter By

Projects Active in Year

2010 (1186)
2009 (1281)
2008 (807)
2007 and prior (410)
Year Unknown (86)

Sponsor

FAA (223)
FHWA (675)
FMCSA (24)
FRA (139)
FTA (285)
NHTSA (74)
PHMSA (60)
RITA (567)

Level of Funding

Under 500,000 (1221)
500,000 to 1,000,000 (224)
Greater than 1,000,000 (263)
Funding Unknown (339)

State

AL (7)
AR (1)
AZ (1)
CA (63)
CO (13)
CT (8)
DE (51)
FL (38)
GA (8)
IA (22)
ID (19)

Project Details

Project Title	**Aqueous Ethanol Ignition & Engine Studies, Phase II**
Program	University Transportation Centers Program
Abstract	During the first year of this project, we will use our new heavy fuel evaporator and second plug-flow reactor to expand the range of catalysts, alternative biofuels, and ethanol-oxygen mixtures that we can test. In our engine laboratory we will acquire data with our Cooperative Fuel Research (CFR) engine to understand the differences between blended and separate injection of aqueous fuels, design/fabricate different igniter configurations for timing studies, and install a dilution tunnel/TEOM purchased from another grant. We will continue to make our laboratories available to other researchers and instructors in the Center for Clean Vehicle Technology. Outcomes of this work will include: 1) key information (light-off temperature and heat generation rate) needed for engineering timing models used to optimize igniter design; 2) design specifications and performance predictions for engine designs that are optimized for igniter systems; and 3) infrastructure improvements that enhance our competitiveness in state and federal funding programs.
Sponsoring Organization	RITA
Sponsor Contact Sponsor Contact Address	Mercado, Lydia
Sponsor Contact Phone Sponsor Contact Fax Sponsor Contact Email	1-202 3663372 1-202 4932993 lydia.mercado@.dot.gov
Performer Performer Address	University of Idaho, Moscow National Institute for Advanced Transportation Technology, 115 Engineering Physics Building Moscow ID 83844-0901
Project Status Project Start Date Project End Date Project Funding Amount	Active 8/16/2010 $85,647.00
Project Findings & Outputs	

Questions / Comments?

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