LightMAT
Lightweight Materials
CONSORTIUM

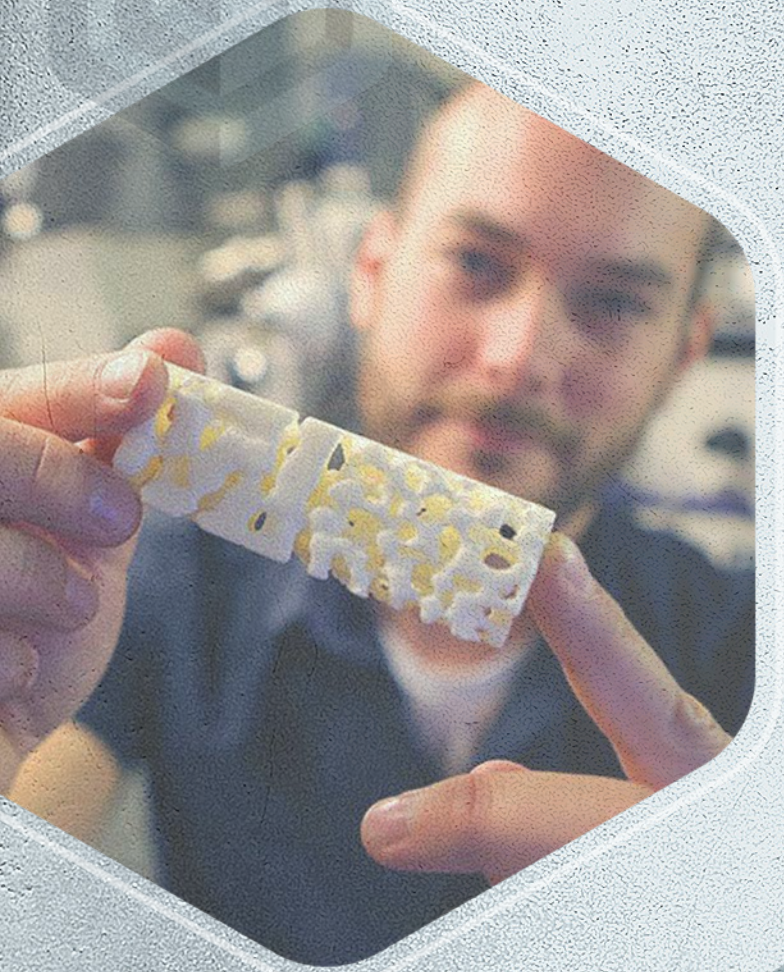
LightMAT: A Multi-Lab Consortium for Accelerated Lightweight Materials Development

U.S. DEPARTMENT OF ENERGY | National Laboratory Impact Initiative

EMN Energy Materials Network

February 9, 2017

Agenda



8:30 Registration
9:00 Introductions
9:30 Welcome & Meeting Objectives
9:45 EMN / LightMAT Perspective & Vision
10:15 Overview of LightMAT & Capability Network
11:00 Networking break
11:15 Contracting Agreements & Technology Transfer
12:00 Lunch: LightMAT Capability Highlights
1:00 DataHUB Development & Vision
1:45 Shaping LightMAT Framework & Critical Capabilities
2:00 Opportunities to Leverage LightMAT
2:30 Questions & Answer / Open Discussion
3:30 Closing Comments / Adjourn

LightMAT

Meeting Objectives

1. Industry briefing of LightMAT and the capability network

2. Solicit feedback about LightMAT structure and value proposition

3. Highlight opportunities to leverage LightMAT resources

Interactive Feedback

- Poll Everywhere: Real-time audience participation
- Web browser: pollev.com/LightMAT
- Text: lightmat to 223-33
- Hotel WiFi: Crown Plaza Detroit Downtown
  password: CPDetroit

Outline

- Objectives of LightMAT
  - What is LightMAT
  - Who are the members
  - How is it funded
- Four Pillars of LightMat
  - Capabilities Network
  - Clear Point of Engagement
  - Data and Tool Collaboration
  - Streamlined Access
- How to Engage and Leverage LightMAT
  - Funding mechanisms
  - Web portal access
  - Contact information
- Questions and Comments

LightMAT Purpose

Energy Materials Network

U.S. Department of Energy

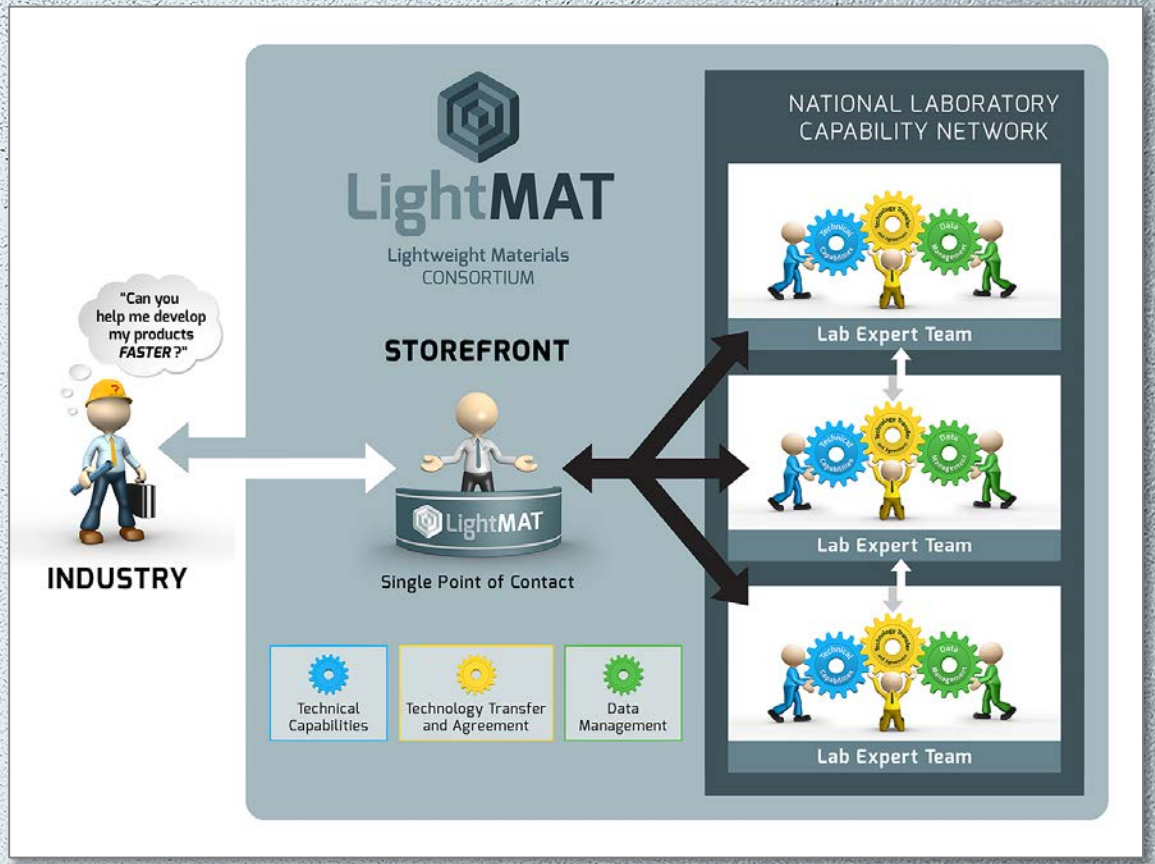
Established as part of the Energy Materials Network, under the U.S. Department of Energy's Clean Energy Manufacturing Initiative, the mission of the Lightweight Materials National Lab Consortium is to create an enduring national lab-based network, enabling industry to utilize the national labs' unique capabilities related to lightweight materials.

Conduct workshops, industry outreach, and network assessments to identify capability gaps, accessibility gaps, and necessary upgrades

LightMAT – Lightweight Materials Consortium

Program Objectives:

- Facilitate connection between industry needs & National Lab capabilities
- Create an enduring, coordinated national capability network
- Accelerate lightweight materials development & deployment in the U.S.



Who is LightMAT

National Laboratory Capability Network

LightMAT Funding Mechanisms

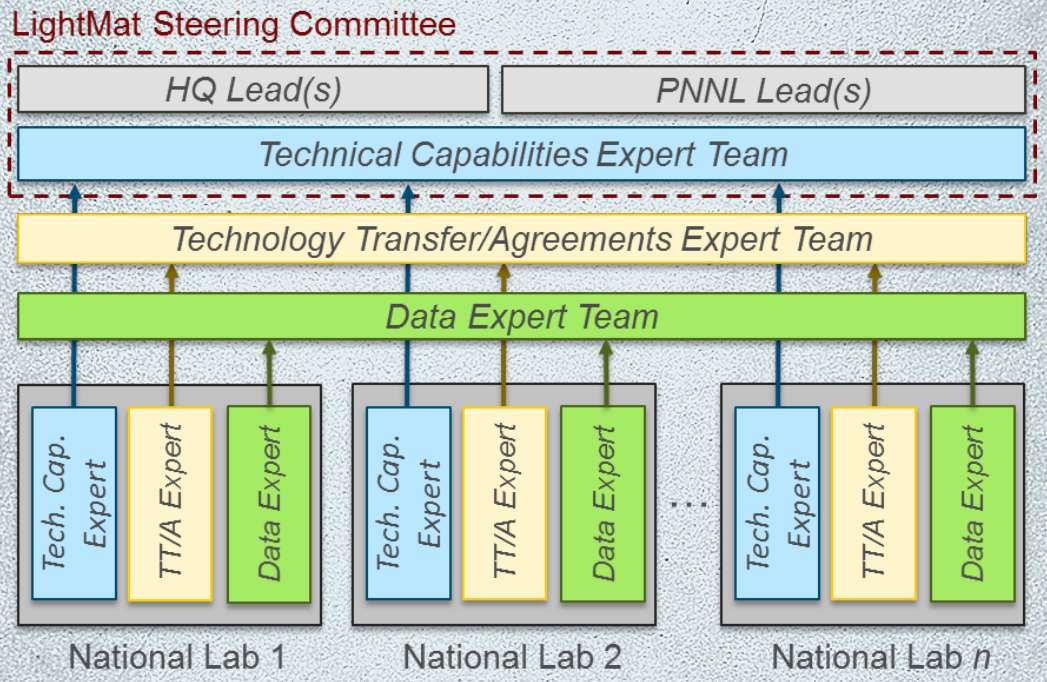
- Funding Opportunity Announcement (FOA)
  - FY16 VTO DE-FOA-0001384
  - FY17 VTO DE-FOA-0001629
  - Flexibility to allow other federal programs/entities to co-sponsor LightMAT
- DOE Direct Funding
  - VTO provides guidance on the characteristics of appropriate direct funded projects
  - Industry users approach LightMAT and develop project plan with the concierge
  - Pending HQ approval, LightMAT funds support activity at the National Labs while at least 50% cost-share supports industry activity
- Industry (with multiple labs)

Four Pillars of LightMat

- **WORLD CLASS MATERIALS CAPABILITY NETWORK**
  - Create and manage a resource network comprised of capabilities from across the DOE National Laboratory system.
- **CLEAR POINT OF ENGAGEMENT**
  - Provide a single point-of-contact and concierge to connect industry research teams engaged in lightweight materials R&D to the resource network.
- **DATA AND TOOL COLLABORATION FRAMEWORK**
  - Capture, share, and leverage expertise, data, and tools developed for application across the network and partners. Established as a data repository to aid in accelerated learning and development through data-driven analytics.
- **STREAMLINED ACCESS**
  - Facilitate rapid completion of agreements for external partners, such as intellectual property (IP) and non-disclosure agreements, and aggressively pursue approaches to reduce non-technical burden to partners.

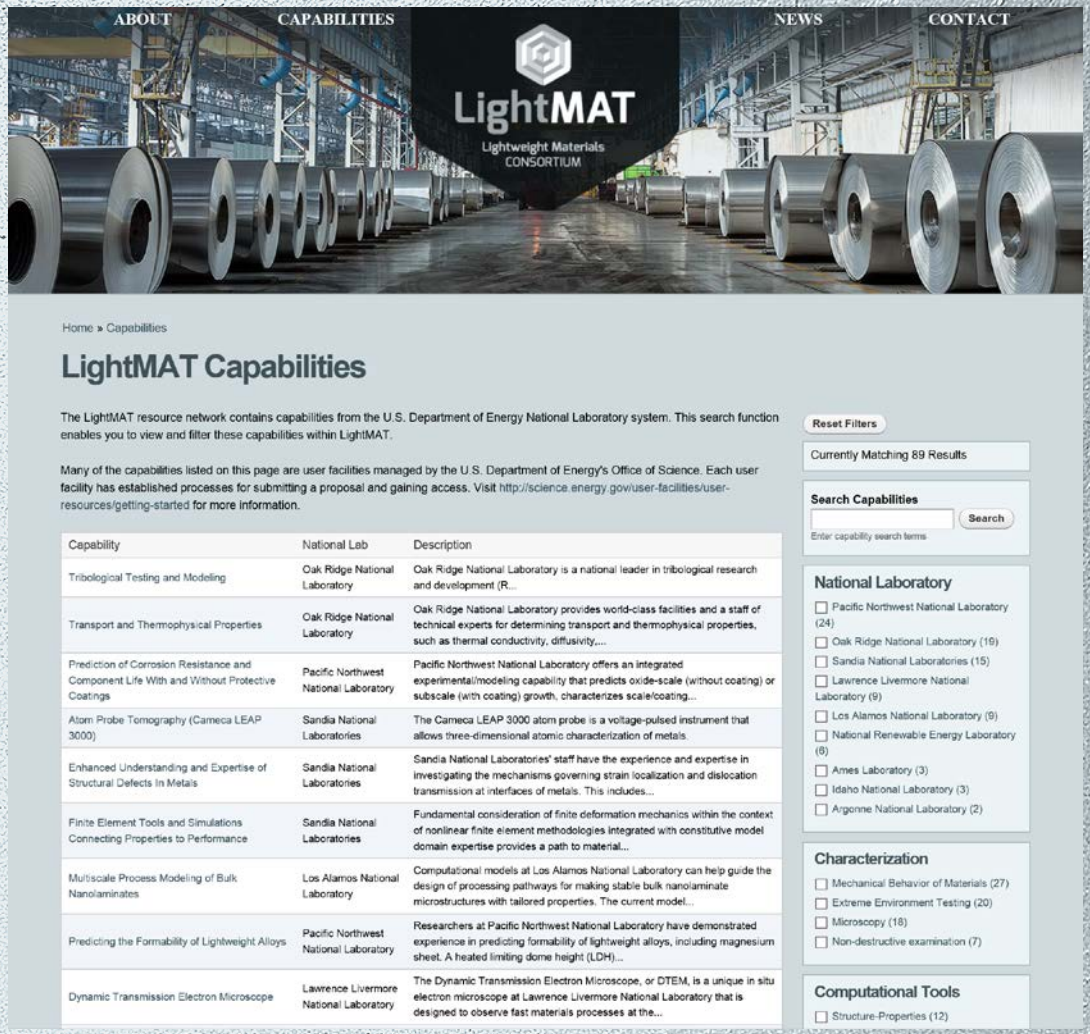
World Class Materials Network

- Each participating National Lab forms a three person “Lab Expert Team”
  - Technical Capabilities Expert
  - Tech Transfer and Agreements Expert
  - Data Expert
- These teams matrix across the labs to provide quick response to partner needs



World Class Materials Network

- Initial capability catalog listing of lightweight metals and composites in place at: https://lightmat.org
- Network is continuously expanded to support a broader selection of LW materials capabilities



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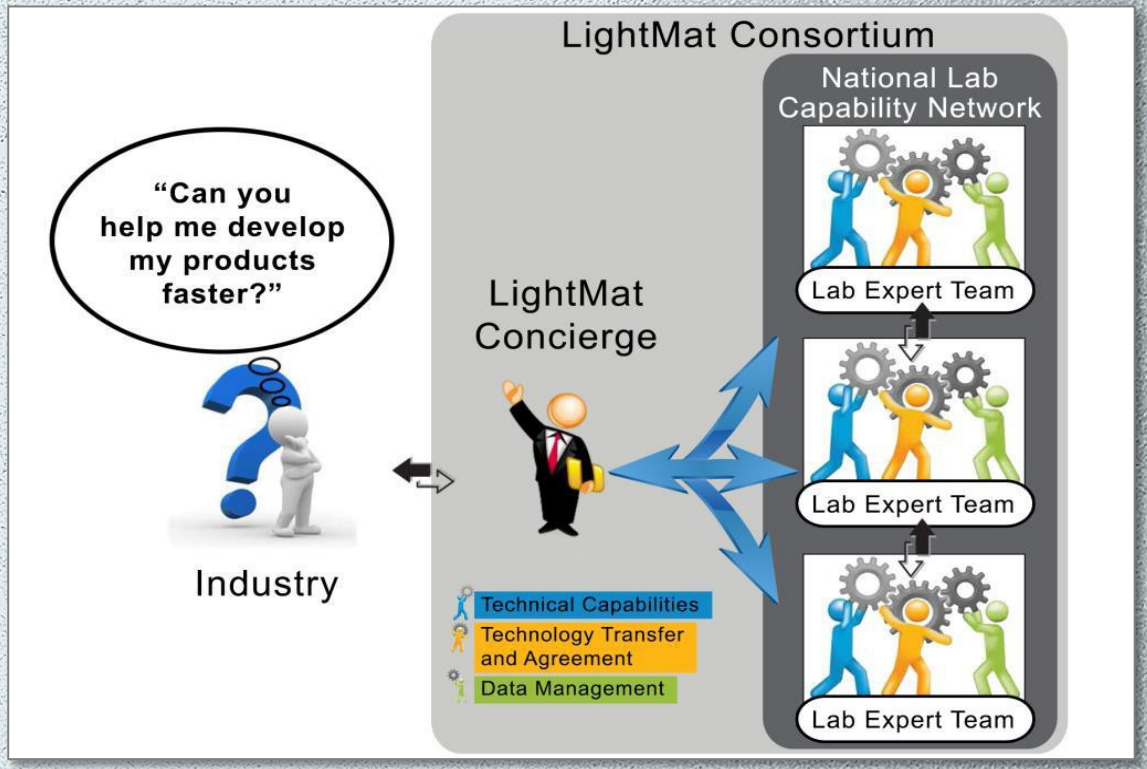
Clear Point of Engagement

LightMAT Concierge:

- Match-making industry with resources across network
- Facilitate rapid contract agreements
- Coordinate data storage & analysis
- Conduct outreach activities
- Operate virtual portal as LightMAT storefront

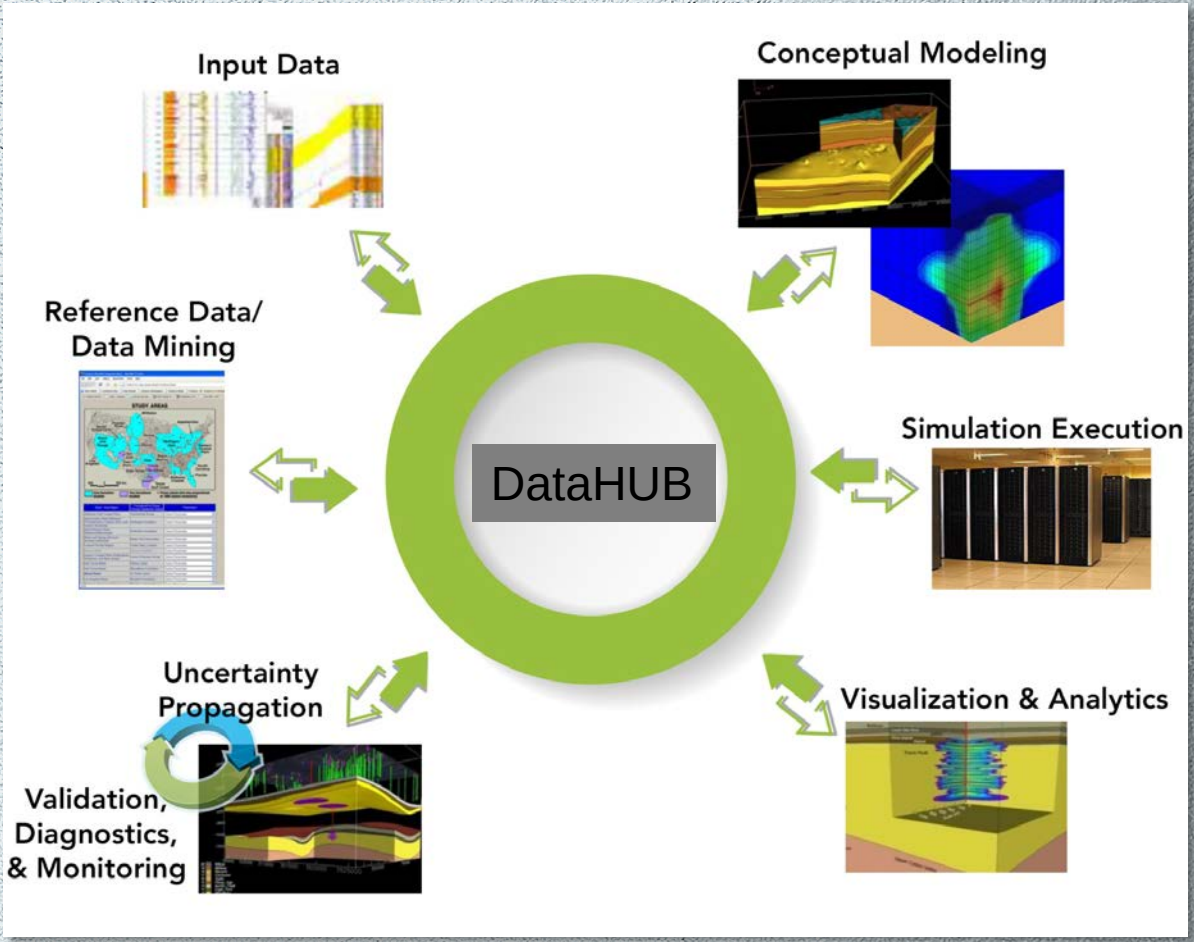


Data and Tool Collaboration

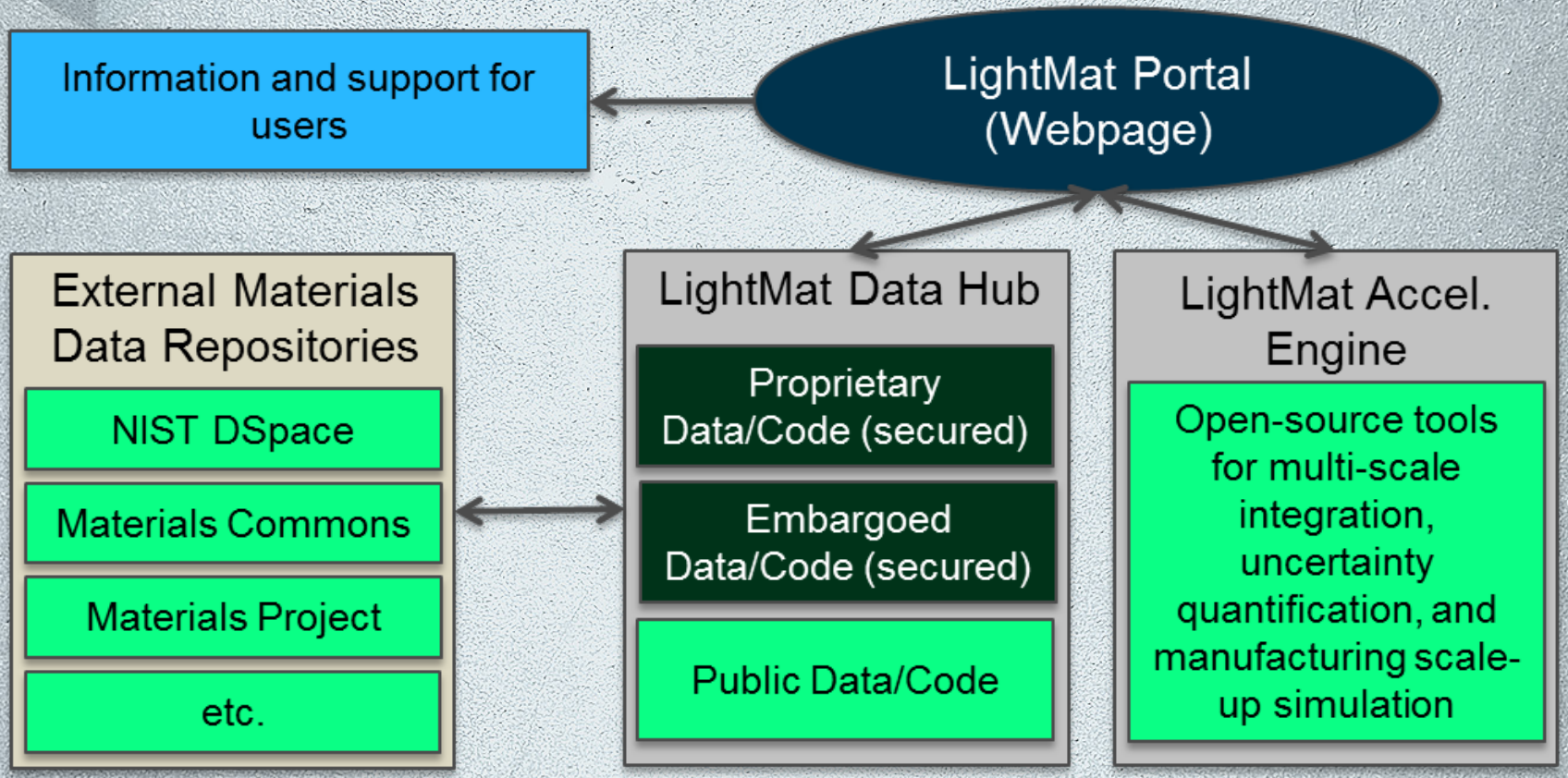
LightMAT Portal

DataHUB

Acceleration Engine



Capture and Leverage Data



Streamlined Access

Simplify agreement process to the greatest extent possible

- Maintain rapid response agreements
- Engage with strategic partnership projects
- Develop a single, pre-approved, mutual NDA between all consortium partners
- Use exploratory licenses whenever possible

Facilitate agreement process when complexity is unavoidable

Intellectual Property Management

NDA

Agreements

LightMAT Metrics

Success will depend on building strong partnerships

- Create new projects & annual opportunities
- Outreach and host workshops
- Streamline agreements with execution within 6-weeks
- Data gathering & dissemination

LightMAT

Direct Funded Project Purpose

To incentivize and catalyze the accelerated adoption of new lightweighting technologies by providing industry partners with direct access to the LightMAT network of resources

Industry identifies a specific, non-powertrain, application for an on-highway vehicle where an advanced material or manufacturing process would enable significant weight reduction.

Project Requirements

- Industry identified technical challenges & capability needs
- Duration: Less than or equal to 2-years
- LightMAT funds: Less than or equal to $300,000 per project
  - Federal funding allocated to providing LightMAT resources only
- Industry cost share: Greater than or equal to 50%
- Qualifying scope: Lightweighting of the vehicle structures through materials or processing technologies

Note: Funding of selected projects dependent on available LightMAT budget

Application & Selection Process

1. Industry partner approaches LightMAT concierge
2. Industry develops project concept white paper
3. LightMAT reviews qualifications and scores criteria
4. DOE approval decision and authorizes funds
5. LightMAT notifies industry partner and initiates CRADA and NDA agreements
6. LightMAT distributes allocated funds
7. Partners begin work

Note: Projects are subject to DOE review and reporting requests

New LightMAT Opportunity

Open opportunity: February 9, 2017

Anticipated # of projects: 3-5 @ $150k-$300k each

White papers due: March 31, 2017
Selection decisions by: April 21, 2017
Projects kick-off: June 1, 2017

Note: project concept white paper template and criteria available at http://LightMAT.org or by contacting the LightMAT Concierge

Project Success Metrics

1. By accessing LightMAT resources, the industry team is able to dramatically accelerate (2x or greater) the development cycle to deployment, or dramatically improve the material or manufacturing process, when compared to a comparable project without access to LightMAT capabilities.
2. Following the project completion, the material or manufacturing process stands a significant chance of being moved into commercial production within 5-years

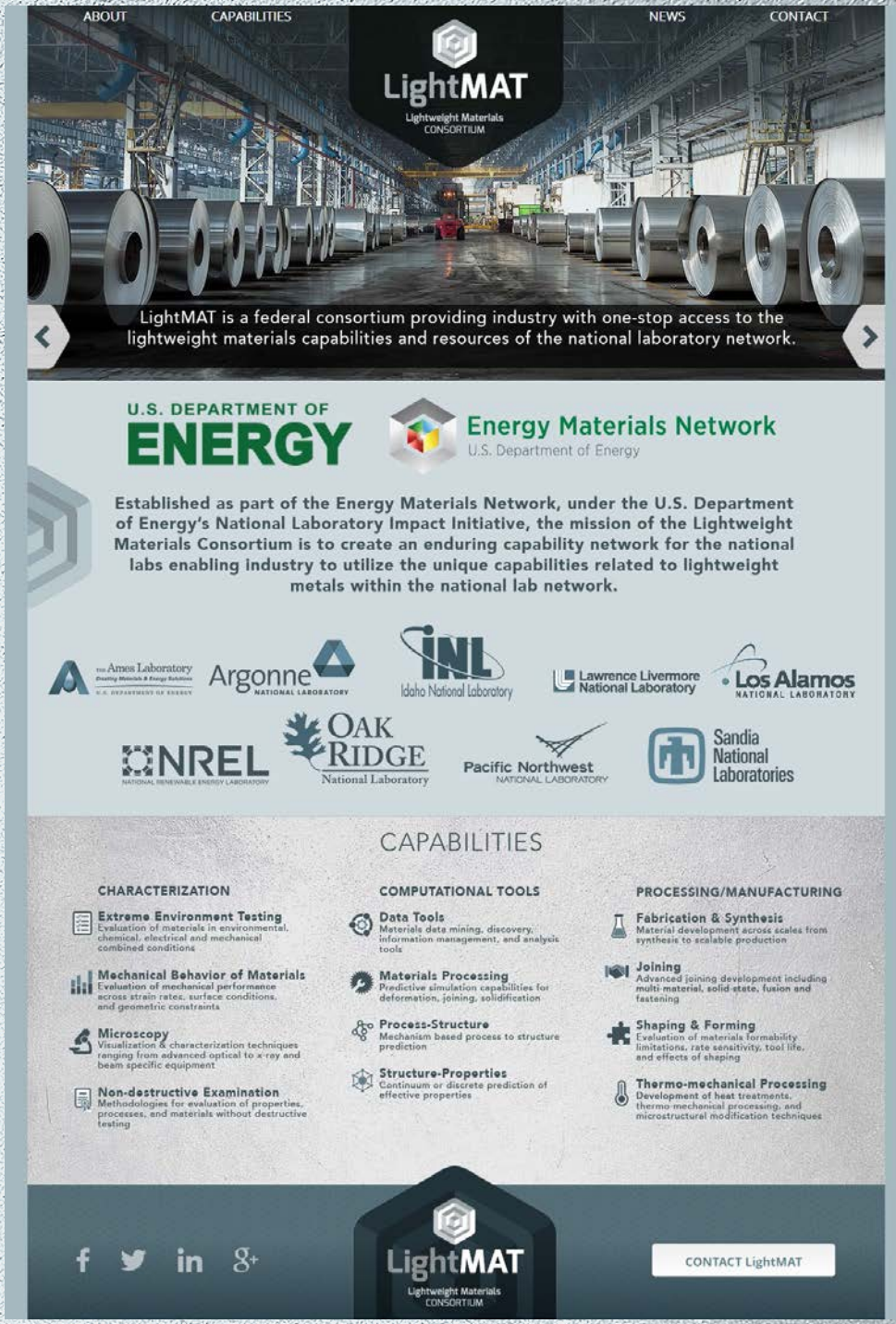
Note: The 5-year horizon ensures that LightMAT is not applied as a core technology development mechanism, but rather a way to address targeted challenges in industry in a fairly quick fashion.

Contact Information:

email:
contact@LightMAT.org

phone: (509)375-3822

web: http://LightMAT.org



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