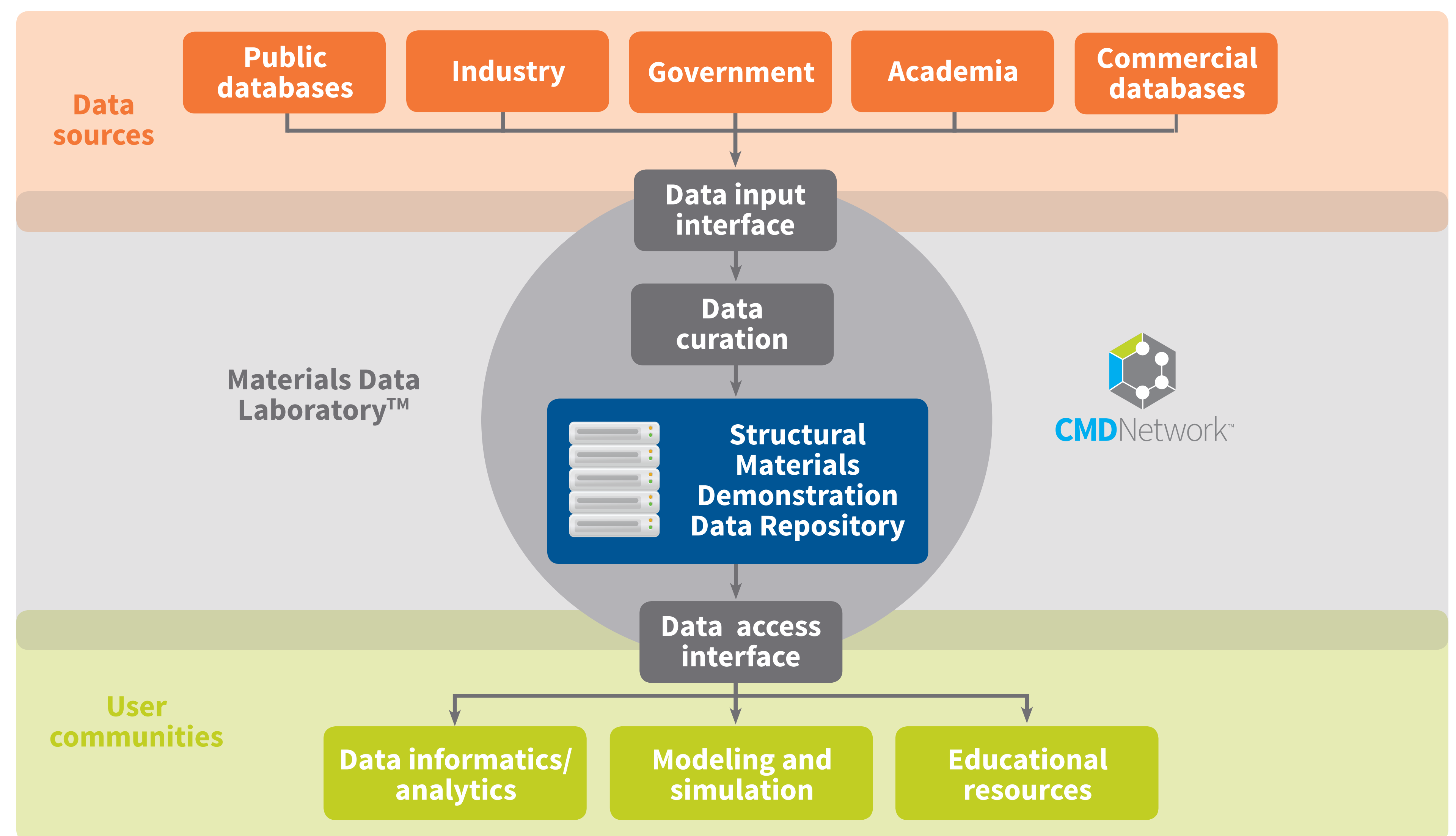


Structural Materials Data Demonstration Project



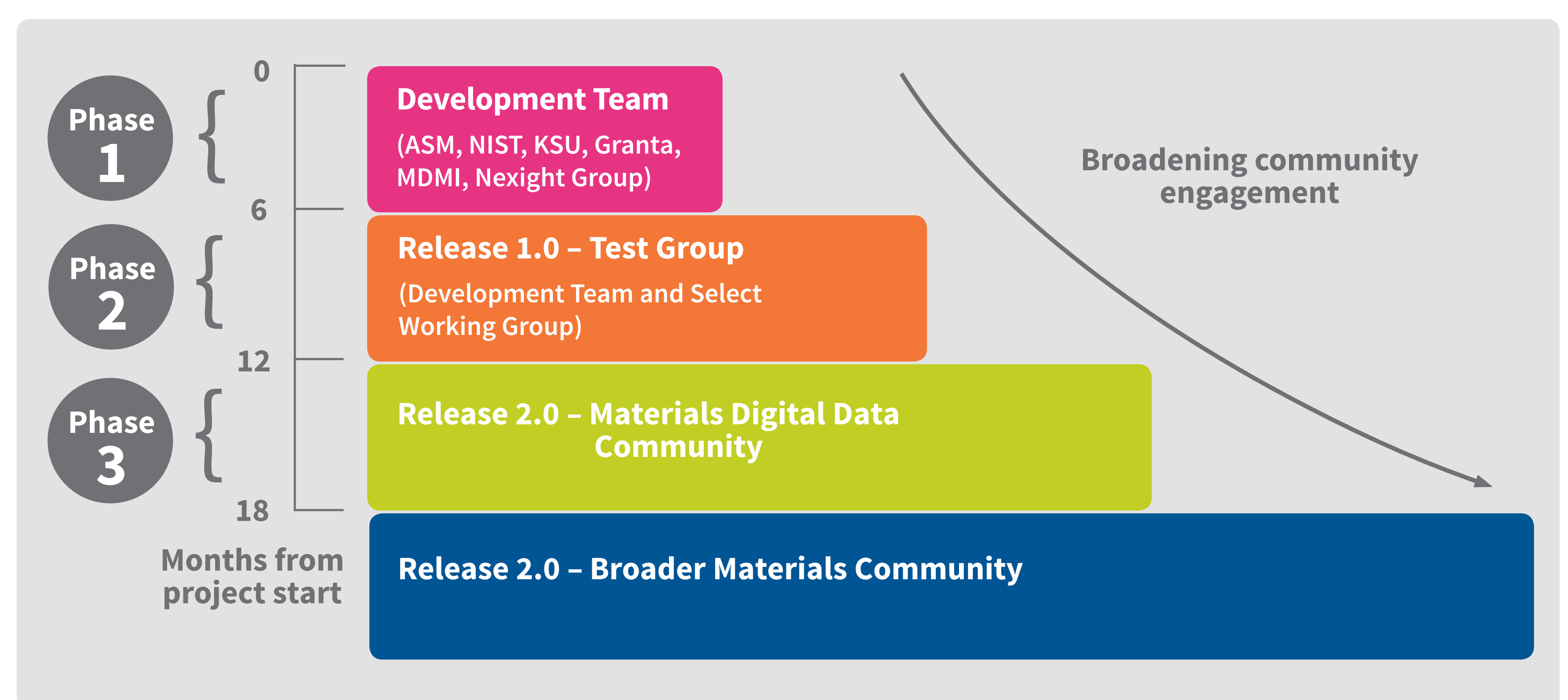
Creating an open demonstration data repository for metallic structural materials

The Structural Materials Data Demonstration Project (SMDDP) is a cooperative research project with the NIST Materials Measurement Laboratory (MML) that is working to create an open demonstration data repository for metallic structural materials. In its initial phase, the project is focusing on the heat treatable aluminum 6061 alloy and its underlying ternary system of Al-Mg-Si, incorporating diffusion, phase equilibria, microstructural, and mechanical property data. The overall objective of the project is to provide a tool that the materials community can use to accelerate progress toward the goals of the Materials Genome Initiative (MGI).



Partnering with NIST, industry experts, and the materials digital data community

SMDDP consists of three phases, marked by the progressive development of key data repository elements and access by increasingly larger segments of the materials digital data community. The partners guiding the project include ASM International, NIST MML, Granta Design Ltd. and its affiliate Materials Data Management Inc. (MDMI), Kent State University, and Nexight Group.



Accelerating the digital data goals of the Materials Genome Initiative (MGI)

SMDDP is one component of the Computational Materials Data (CMD) Network, an effort to support MGI through the development of an open-source repository for cultivating and sharing pre-competitive data. By collecting and curating multi-scale material data from range of sources, SMDDP will help achieve MGI's goals by providing the materials community with the data sets they need to model with ICME tools.

Establish well-pedigreed and curated demonstration datasets for non-proprietary metallic structural materials data over all relevant length scales	Make the datasets open to the materials data community for use in data analytics, modeling, and educational purposes; engage the community and widely disseminate the project findings
Work with NIST and the materials data community to develop materials data schema and ontologies for the demonstration datasets, cognizant of broader interests and datasets	Develop and implement data capture and curation procedures and data access procedures that can serve as models for other data repositories
Develop and carry out a series of test problems that represent relevant use cases for the repository	Establish the framework for the utilization of the demonstration datasets for educational purposes

Project Partners



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