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Research @ the Speed of Thought Executive Summary

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Jacobson, Matt, "Research @ the Speed of Thought Executive Summary" (2014). *Master of Science in Logistics & Supply Chain Management Capstone Executive Summaries*. Book 6.

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ICE Executive Summary

The Air Force Research Lab (AFRL) Materials and Manufacturing Directorate (RX) conducts material and manufacturing technology research and development (R&D) on critical warfighter programs. The major deliverables of the R&D process are new introductions of, or improvements to, existing materials, material systems, and material development processes. Consistent with private sector R&D, there are several key attributes of these deliverables: Accuracy, Timeliness, Cost-Effectiveness, and Value.

An analysis of current research methods and technologies has revealed capability gaps in all of the required attributes. Amplification in the supply chain, disconnected processes, non-standard data transactions, stove-piped communities, non-robust modeling techniques, misalignment of project milestone management, and significant data management overhead are but a few of the symptoms.

Based on the findings of a state-of-the-art analysis, an Integrated Collaborative Environment (ICE) will be developed to address the primary issues described above, and resolve capability gaps by providing laboratory and materials information management capability. ICE will be a federated, centralized, enterprise data management system for strategy management of the RX research process. Additionally, it will serve to provide the S&E community, which includes engineers, modelers, technicians, and support staff, with a reliable and collaborative toolset for enhancing their day to day work.

The implementation of ICE will not only address R&D supply chain operation shortcomings, but is anticipated to return \$12,000,000 in research workload annually from reductions in data management overhead.