The Smart Manufacturing Leadership Coalition Update

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Smart Manufacturing (SM) integrates network-based data and information that comprises the real-time understanding, reasoning, planning and management of all aspects of a manufacturing and supply chain enterprise. SM is facilitated through use of advanced sensor-based data analytics, modeling and simulation in real-time. SM is about game-changing potential to energize innovation, address productivity, achieve new and structurally different performance goals, and drive the competitive advantage of investments. Unfortunately, a cost-effective infrastructure to integrate real-time manufacturing intelligence and active management across the operations of an entire production operation does not exist today. The Smart Manufacturing Leadership Coalition (SMLC) has come together to develop an infrastructure and realize a set of goals that no one company can accomplish alone.

SMLC enables stakeholders in the smart manufacturing industry to form collaborative R & D, implementation and advocacy teams for development of the approaches, standards, platforms and shared infrastructure that facilitate the broad adoption of manufacturing intelligence. Without a modern industrial infrastructure, adoption of SM Systems is not economically viable. Process control and automation systems implemented in piecemeal fashion will continue to limit innovation and capability.

In July, 2012, SMLC was organized as a nonprofit business league under Section 501(c) (6) of the United States Internal Revenue Code for the following purposes:

(a) To promote the development of approaches, standards, platforms and shared infrastructure, that facilitate pervasive application of sensor-based modeling and simulation technologies broad deployment of manufacturing intelligence;

(b) To hold meetings and provide a forum for discussion of subjects of interest to its members engaged in Smart Manufacturing which is the dramatically intensified and pervasive application of networked information-based technologies throughout the manufacturing and supply chain enterprise;

(c) To maintain active communications between government organizations and producers and users of Smart Manufacturing technology and those engaged in related technology development, and between American and international firms involved in Smart Manufacturing;

(d) To organize workshops and seminars to communicate information about the technologies, products and services of the industry;

(e) To seek, receive, administer and disburse resources, including grants or other contributions, intended to advance the goals of smart manufacturing

SMLC through its members (industry, academia, and government laboratories) will be addressing the following issues during the Fall of 2012:

1. The Role of Test Beds in Facilitating Smart Manufacturing - the role of test beds to develop and refine infrastructure needs and lower the risk of deployment

    a) Which key industry challenges with Smart Manufacturing must be addressed or mitigated, and which SM opportunities have not been discussed

    b) What features, functions and approaches do shared infrastructure and a platform need to encompass in order to address these challenges or objectives

c) What outcomes from test bed demonstrations best demonstrate Smart Manufacturing and the value of shared infrastructure (e.g., SM Platform)

d) What company outcomes are needed to support being a test bed

e) What test bed technology focus areas are attractive for co-investment

2. Technical Platform – Specifications, technical scope, challenges and methodology of the SM Platform.

f) What features, functions, standards and protocols do shared infrastructure and a platform need to encompass in order to address industry challenges and objectives

g) Given the specifications overview of the SM Platform, what questions or concerns exist (e.g., security)

h) What key technical barriers need to be resolved with the SM Platform

i) What technical challenges should a prototype implementation address first

j) What technical approach will lead to a successful industry-driven platform launch

3. Business Collaboration – Industry-driven collaboration and business model candidates to enable field implementation of SM.

a) What are the primary drivers for collaboration

b) What are the areas of alignment between individual interests and the collaboration

c) What roles, contributions and commitments are necessary for public-private and private-private partnerships

d) What measures should be used to assess the performance and impact of the SMLC

e) What membership and participation structure would be effective for financial and intellectual property obligations, access and licensing

4. Workforce Skills Development – Enhancing education and workforce skills to meet new emerging technologies.

a) What are the consultation and/or training skills needed for a successful test bed demonstration and what are the workforce skills needed to ensure success of smart manufacturing systems

b) How can SMLC incorporate education into research and development and test bed activities

c) How can SMLC support advanced manufacturing workforce development