ROADMAP TO INDUSTRY 4.0
A Strategic Partnership with Engineering Digital Industry

On A Digital Transformation Journey
Engineering Digital Industry delivers the power of the Digital Thread for Industry 4.0. Leveraging our unique experience implementing and integrating the entire spectrum of digital tools, our team facilitates the adoption, implementation, integration and transformation journey for manufacturers across all industries worldwide.

Our company has been a pioneer in digital manufacturing since long before the term “Industry 4.0” was coined. Our niche expertise in virtual-to-physical manufacturing allows our customers to realize the benefits of “shift left,” in which virtual planning and validation shorten engineering time and allow for potential risks to be identified before products are being manufactured in the physical plant. Our team has been focusing on the idea of building and delivering solutions that bridge the gap between the virtual and physical worlds of manufacturing for many years, and we are the only company in the world with the industry knowledge, global capabilities and technical skillset to support the entire lifecycle of products and processes, from engineering to simulation to manufacturing to utilization.

Industry Challenges
» Increasing global competition
» Large volumes of data on the manufacturing floor
» Increasing product complexity
» Strict quality standards and regulations
» Increasing demand for flexibility from consumers

Business Drivers
» Reduce time-to-market ("shift left")
» Improve efficiency
» Enhance flexibility of manufacturing process
» Increase throughput
» Ensure consistent quality of products
» Increase transparency and control over data and processes
What is An Industry 4.0 Assessment?
Even if you recognize the benefits of digitalization, it is often difficult to understand what systems should be put in place, what priorities should be, or if systems will really help drive business value in line with your company’s vision. A strategic partnership with Engineering Digital Industry can provide guidance for manufacturers trying to navigate the digital landscape across different systems, business units and technologies. To help them overcome the challenges of digital transformation, we collaborate with our clients to define what Industry 4.0 means to them and how they can realize it:

» Identifying current system capabilities and gaps
» Leveraging proven analysis methodologies to conduct workshops and understand current business processes
» Developing a customer-specific digital architecture and data flow between different levels of the organization: Enterprise Business (Level 4), Manufacturing Operations (Level 3) and Automation & Controls (Levels 2 & 1)
» Recommending prioritization of investment
» Defining a solution roadmap for future implementations to achieve full capabilities of Industry 4.0

Our Industry 4.0 Methodology
Typical assessments range between 3 to 5 months, depending on the number of systems, sites and topics to be included. The deliverables include a set of documents and an executive presentation to summarize the findings and roadmap.

» Business Groups
It is important to understand the needs from multiple business groups involved in production to ensure that the systems implemented support the entire company’s goals and requirements. Feedback from each group will enhance the requirements gathered, give better visibility to priorities and provide clarity on how different teams work together within an organization.

» System Review
To achieve digitalization in manufacturing, a company has to look across systems, business groups and processes (both manual and automated). Our approach to cross-system assessments is to align with the industry standard ISA-95. This approach provides a point of reference which can be easily aligned to software systems and functional ownership.

» Process Review
Our team captures business processes and maps their interconnectivity across system levels to better define needs and identify gaps - both functional and technical - in the current landscape.

» Software Maturity Model
Taking business drivers, business processes, functional requirements, gaps and legacy systems into account, our team defines a specific Industry 4.0 roadmap for each customer to achieve digital transformation via a Solution Maturity Model that aligns to the company’s 3-5-year vision.
Bridging the Virtual-to-Physical Gap

The traditional manufacturing industry is in the midst of a digital transformation, growing each day by evolving and newer technology solutions. The interaction between the virtual and real worlds is opening new ways for companies to integrate their customers’ needs and preferences into their development and production processes. The utilization of manufacturing data management in smart production systems is revolutionizing a seamless Digital Thread, promoting continuous success throughout the entire supply chain.

» The Digital Thread: The focus of companies on the connection between the physical product and the virtual product enables the ability to conceptualize, compare and collaborate. With the Digital Thread, manufacturers can visually conceptualize their real-world manufacturing processes. This formulates a transition from the physical product to the virtual product in order to guarantee that what companies are producing is what they actually want to produce. Finally, companies can collaborate internally within the organization and even throughout the supply chain to ensure up-to-the-minute knowledge about and control over the products being produced. By leveraging technology to bridge the virtual and real worlds of manufacturing within their organization, they are able to improve productivity, drive uniformity of production, and ensure the highest quality products.

» The Digital Twin: The virtual connections of product, process and plant, known as the Digital Twin, are also extending value across the product lifecycle and streamlining the entire supply chain. With the increased focus on the “shift left” principle, companies are experiencing how virtual planning and validation can shorten engineering time and facilitate identifying potential risks before products are being manufactured in the physical plant. The Digital Twin links together design and production, so companies can see everything, plan the details, prevent problems, close the loop and optimize the complete system. The Digital Twin enables manufacturers to adapt to new ways of working, gain flexibility and deliver the toughest jobs while minimizing costs and risk at the same time. This enhances the potential to achieve a Digital Factory, creating a full integration from product ideation to realization.

» The Digital Enterprise: The Digital Enterprise is the ultimate goal, enabling success in new product introduction, Overall Equipment Effectiveness, quick engineering and manufacturing
change order processes, and operating margins within the vision of the corporate business plan. This is the power of the Digital Thread for Industry 4.0.

**Delivering the Digital Thread**

There is no doubt that adoption of Industry 4.0 technologies and digital transformation will determine the manufacturing market leaders of tomorrow. At Engineering Digital Industry, we understand the concept of the Digital Thread and truly believe it can improve manufacturing companies’ processes, operations, efficiency and profitability. Our expert team of specialists works with customers across all sectors, supporting them from the beginning to virtually define and build out their entire manufacturing process, then validating its feasibility in the virtual world, and finally ensuring that it can be executed on the production floor and in the physical layers between PLM and MES. Manufacturing is the heart of industry, but we know that successful solutions take into account a company’s different business areas, departments and players. As we engage with customers, our team pulls in feedback from all groups of an organization to harmonize their needs, build the optimal solutions and deliver the best results. To learn more, contact us at info@engusa.com.

**ENGINEERING DIGITAL INDUSTRY**

We deliver the power of the Digital Thread for Industry 4.0. Leveraging our unique experience implementing and integrating the entire spectrum of digital tools, our team facilitates the adoption, implementation, integration and transformation journey for manufacturers across all industries worldwide. Engineering USA, formerly Hyla Soft Inc., is the North American business division of Digital Industry.