



# Solution Design from GE Digital

Accelerate return on your MES investment during implementations with in-house or third-party resources

## Leverage GE Digital's MES expertise and Lean design process to achieve the right foundation for your MES solution and greater business value

With the right solution design, your MES can have a foundation for consistency, repeatability, and efficiency during implementation. On the other hand, an inexpert solution design sets up your MES initiative for pitfalls, finger pointing, and slower implementation.

At GE Digital, we have worked with in-house and third-party resources that have performed exceptionally during MES implementations. And, we have seen MES implementations falter and gotten called in to recover the situation for the customer.

You have the opportunity now to protect your MES investment and start it the right way with Solution Design from GE Digital's Professional Services team. Rely on our nearly 1 million hours of deployment experience to set the pivotal foundation for your MES implementation.

To minimize risk, our team works collaboratively to provide a holistic and visual methodology that combines:

- Solution design based on a widely acknowledged standard, Unified Modeling Language
- Adherence to the seven principles of Lean software development to deliver higher value in a shorter time
- The world's greatest expertise in GE Digital manufacturing solutions

### Outcomes

- Increase quality at the design stage to drive MES success
- Improve efficiency with standardization in analysis, design and documentation
- Decrease activities that do not add value such as unused design, extra features and relearning
- Maximize reusability of MES and industry-specific models
- Achieve a better foundation for driving first-plant success and scaling to enterprise deployment
- Capitalize on best practices based on decades of experience

## 01 Improve efficiency with standardization and reusability based on expert solution design

Our solution design team drives greater efficiency for your MES initiative with guidance that covers both the big picture and the details. We provide a proven, unified way of analyzing, designing and documenting. With standardization, our process facilitates new team member on-boarding as well as collaboration and communication across teams.

Furthermore, GE Digital's Solution Design prioritizes modularization by using object-oriented design elements – for the greatest consistency, faster training, improved understandability, and maximum reuse for scalability from your first plant through to enterprise. Based on decades of experience, our team excels at the ability to use software artifacts including architecture, design, data elements, interfaces, and more.

## 02 Deliver value faster with Lean software development and a series of quicker wins

When MES requirements are already 100% defined and static, a waterfall design process is valid. However, often, MES requirements can evolve, and an incremental, iterative design process based on Lean software development eliminates waste, builds quality in, delivers faster, and optimizes the whole.

With decades of MES deployment experience – including in our own GE factories – our Professional Services team provides expertise in designing solutions in iterations. We know that this process drives a series of successes that boost the momentum of MES initiatives while also allowing for the flexibility and agility that you need.

## 03 Increase the quality of your solution design for greater success and scalability

GE Digital's best practices in solution design can help you more clearly define requirements that support better planning. Our team minimizes the risk of scope creep with deviation control based on hundreds of deployments. With GE Digital's Solution Design, you can reduce rework, streamline your MES initiative, and accelerate time to value.



### Success with GE Digital's Professional Services

Your trusted partner for full deployment of your GE Digital products, resulting in better outcomes, reduced risks, and higher customer satisfaction – proven and supported around the world..

-  1,300,000+ Deployment hours
-  Thousands of Deployments
-  1,000+ Years of MES experience
-  94% On-time MES delivery



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## Features and Framework

Solutions Design sets the foundation for MES success by combining exceptional industry domain expertise and deep knowledge in software modeling.

### Objectives

- Align the solution design with the end user needs in order to generate the expected value to operations
- Ensure the MES solution's behavior is clearly and concisely defined through standard software modeling techniques
- Accessible and easy for stakeholders to review and validate
- Efficient input for the implementation team to maximize the opportunity for a great first-plant experience

### Solution Design Methodologies

#### Waterfall - use when:

- MES requirements are already 100% defined and static

#### Incremental/Lean (often recommended) - use when:

- Business needs to be fulfilled are clear, but a relevant portion of requirements are not clear
- Solutions have been identified, and there is an initial plan to implement those requirements that provide early value to the business
- Expectation that initial requirements need to be refined or new needs may arise as solutions implemented and value is delivered

### Features

#### Unified Modeling Language (UML)

Software modeling language in the field of software engineering that provides a standard way to visualize the design of a system

#### Requirements Elicitation

Full familiarity with standard techniques to elicit requirements:

- Interviews
- Questionnaires
- Prototyping
- Document Analysis
- Observation

#### Business Process Model and Notation

Global standard for graphical representation to specify business processes

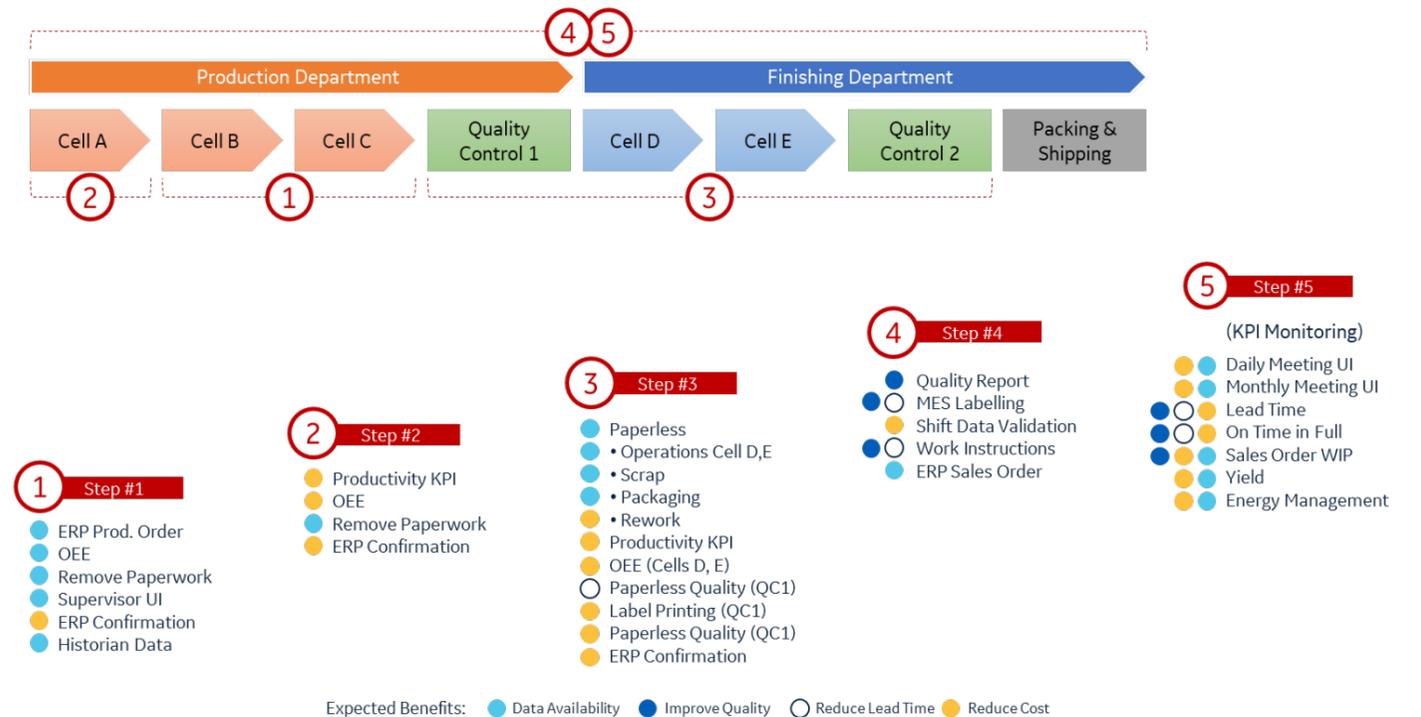
#### Use Cases

A use case diagram is a UML created for use case analysis. A use case diagram provides a graphical overview of the goals that users want to achieve by using the system.

#### Requirement Traceability Matrix

Helps to ensure that the project's scope, requirements, and deliverables remain on track. The matrix "traces" the deliverables by establishing a thread for each requirement - from the project's initiation to the final implementation.

## Example Incremental Design (Lean Software Principles)



Learn more about the advantages of working with GE Digital's Professional Services team and how you can accelerate time to value with our solutions.

LEARN MORE

About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.

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