

# GMLC 1.2.2 Interoperability

## Roadmap Process Overview and Mini-Demonstration

Dave Narang, Maurice Martin, Adarsh Nagarajan

GMLC Interoperability Technical Review Meeting  
Gahanna, Ohio  
May 12 2017

# Agenda

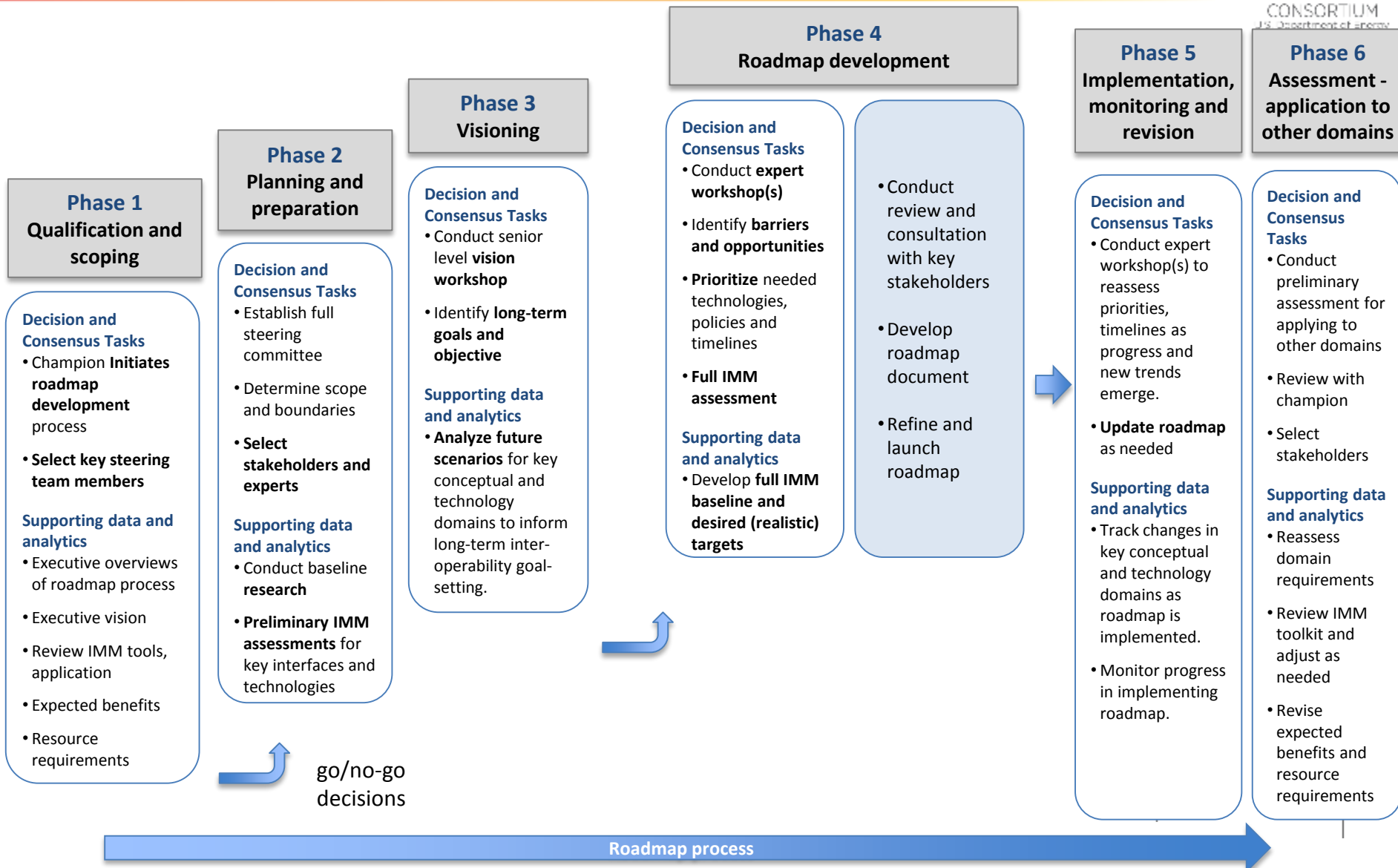


- Day 1 (during IMM breakout)
  - Overview of scenario
  - Develop interoperability maturity level baseline
- Day 2
  - 8:15 – 9:00 am.....Overview of Roadmap
  - 9:00 – 10:45 am.....Mini Roadmap Demo
  - 10:45 – 11:00 am.....notes for wrap-up discussion
  - 11:00 – 11:30 am.....wrap-up, audience feedback

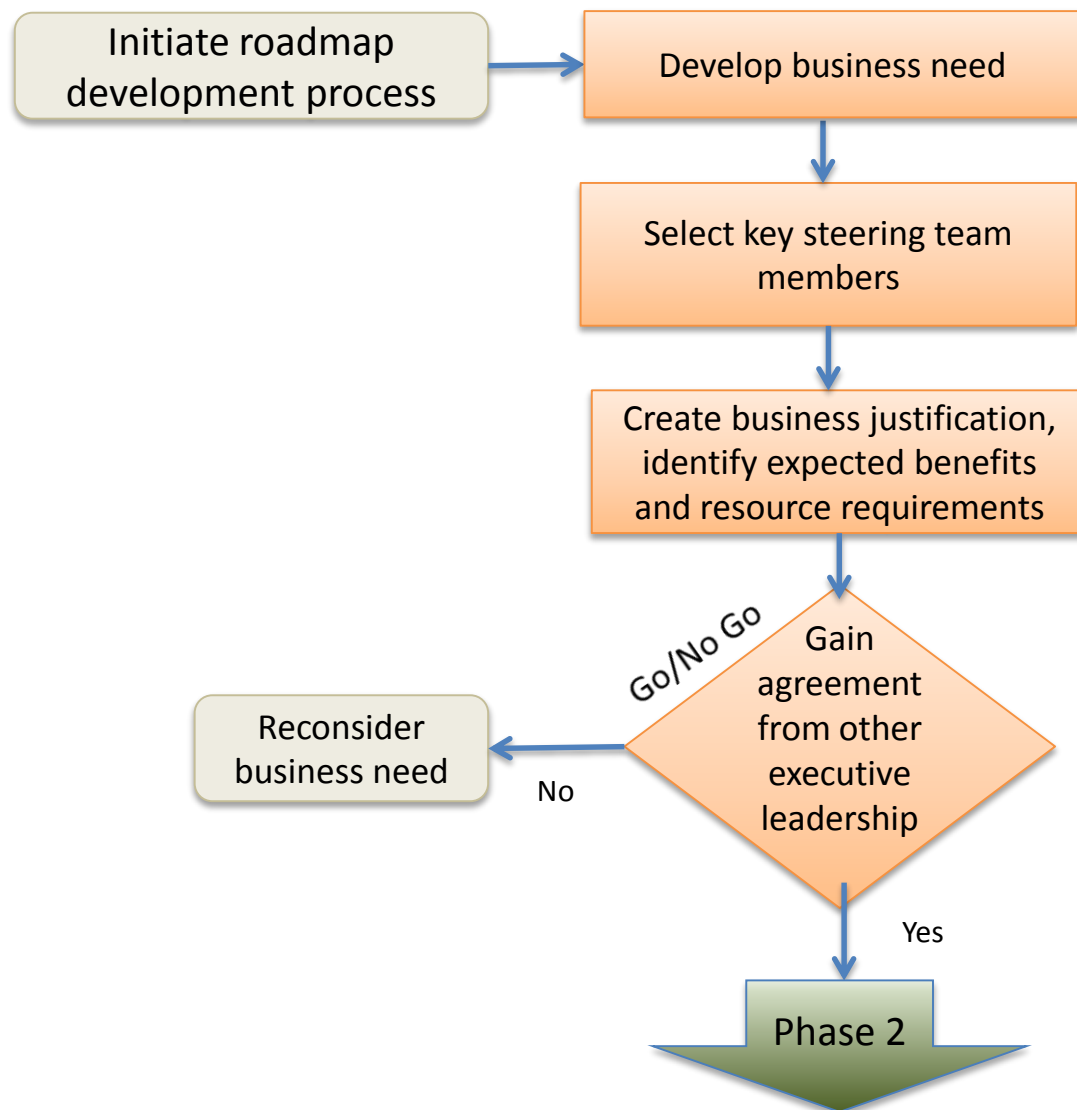
# Roadmap Process

- ▶ Overall goals for design of roadmap process
  - Process should be domain-agnostic
  - Process should be scalable
    - Small or large effort
    - Small or large team
  
- ▶ Complexity, duration of roadmap process is dependent on complexity of effort
  - number of stakeholders
  - Scope
  - geographic diversity
  - number of domains requiring interoperability

# Interoperability Roadmap Process



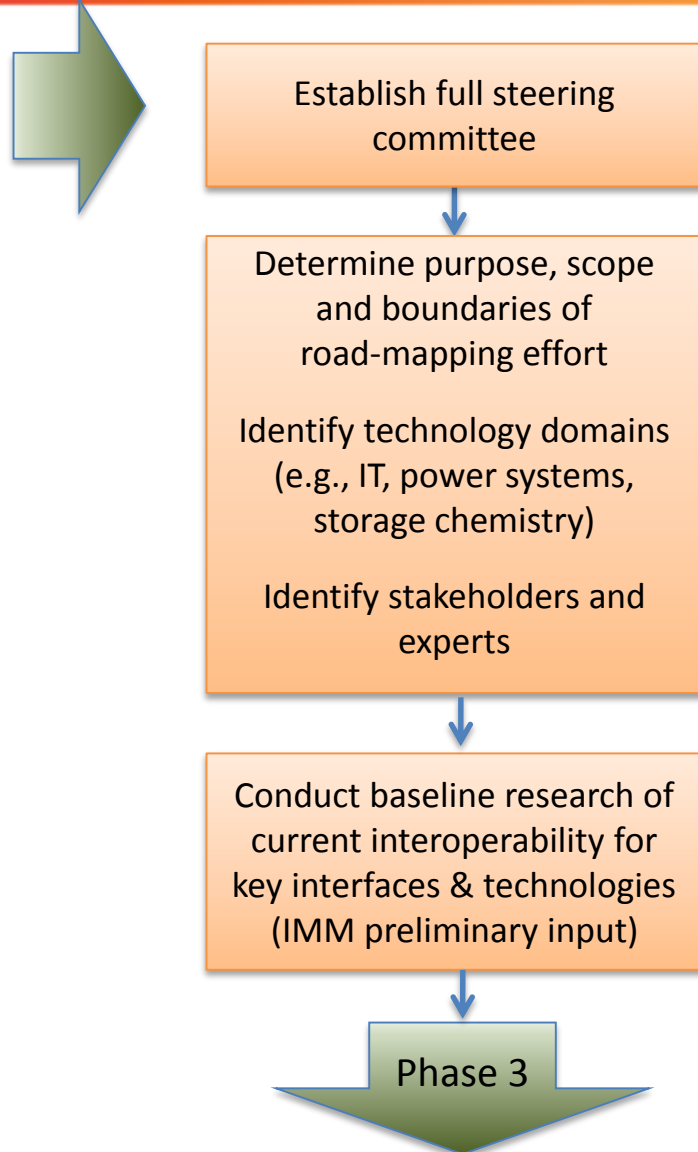
# Phase 1 – Qualification & Scoping



## Key output:

1. Steering team members
2. High level expected benefits
3. Go/No Go decision
4. High-level plan

# Phase 2 – Planning & Preparation



## Example: Energy Storage Integration for Grid Services

### Key Outputs

- 1. Identify Boundaries of road-mapping efforts**
  - What this will roadmap effort will cover and what it will not cover (eg, not a project plan for entire project)
- 2. Identify relevant technology domains**
  - Large amount of distributed energy storage devices used for peak shaving and distribution voltage management; devices are non-utility owned
- 3. Identify time frame**
  - Multi-year
- 4. Determine preliminary baseline for interoperability**
  - Day 1 input
- 5. Identify how the roadmap will be used**
  - This roadmap will guide multiple phases of development including equipment factory certification; lab testing of infrastructure; and initial “test” deployment; full deployment maintenance; and change out
- 6. Identify external entities**
  - Turnkey integrators
  - Multiple client utilities in deployment area
  - Multiple vendors
  - Multiple teams working in parallel
- 7. Identify other useful tools, analysis, or other roadmaps**
  - tbd
- 8. Special notes**
  - May do this elsewhere (depending on project success)
  - For our example, assume some vendors /devices will be replaced or added

## Phase 3 – Visioning



Conduct senior level  
**vision workshop**  
(Input: Interoperability  
Strategic Vision document)

Identify **long-term goals  
and objective**

**Analyze future scenarios**  
for key conceptual and  
technology domains to  
inform long-term inter-  
operability goal-setting.




Phase 4



### Key output:

- 1. Identification of long term vision, goals, and objectives**
- 2. Analysis of future scenarios**  
(what's the overall context for this effort?)
  - Expected trajectory of key domains/technologies
  - Status of other relevant standards, policies,
  - market trends,
  - Status of competing/parallel efforts

## Phase 4 – Roadmap development



Conduct expert workshop(s)

Identify barriers/  
opportunities

Prioritize needed  
technologies, policies  
and timelines

Develop full IMM  
baseline and desired  
(realistic) targets



**Phase 5**  
**Implementation**



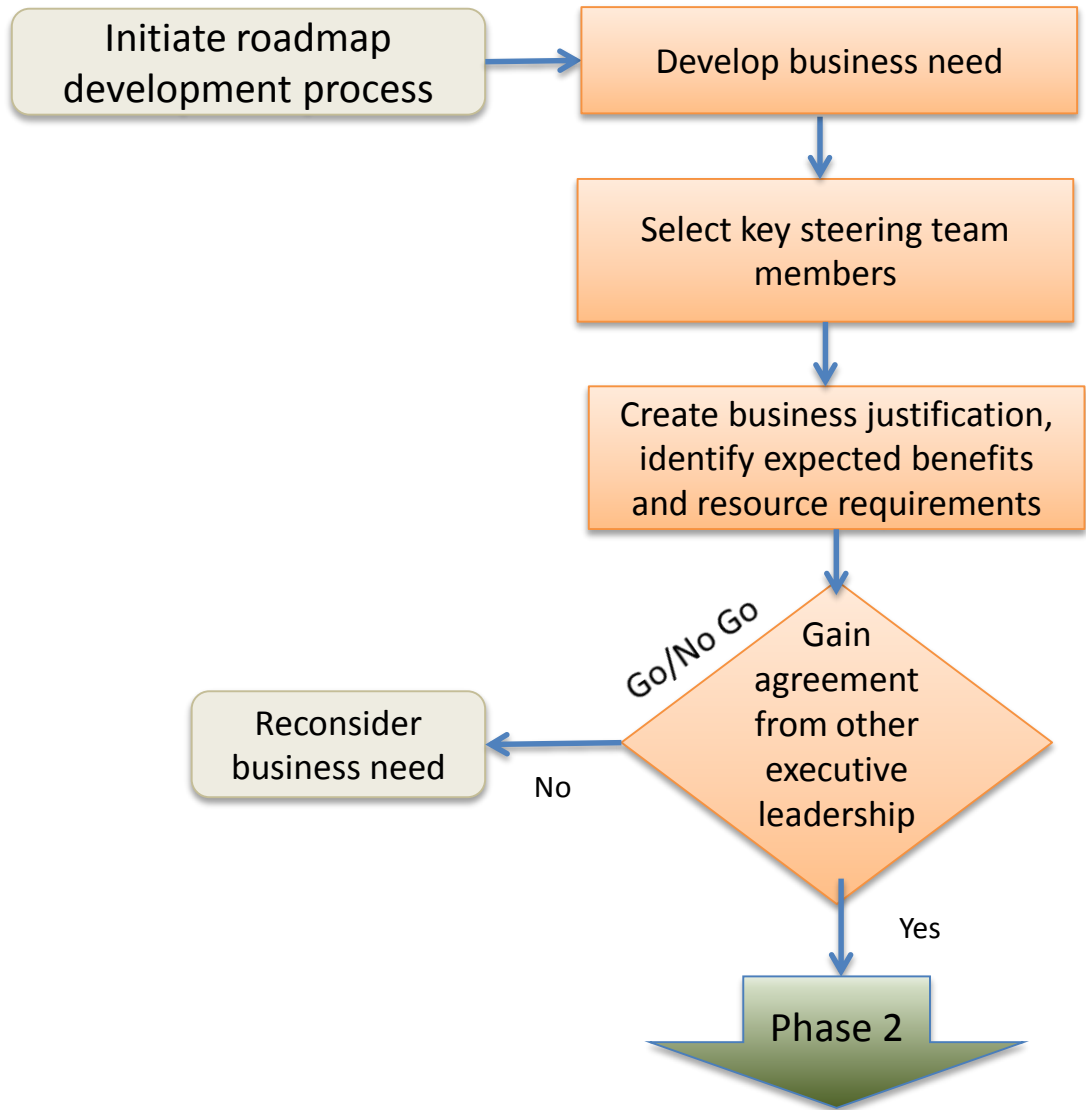
### Key output:

- 1. Development of full interoperability baseline and identification of desired maturity level**
  - Targets are based on what's realistic, needed, desired
- 2. Identification of barriers and opportunities**
  - Technical, process, policy
- 3. Prioritize action plan**
  - Game plan for achieving the desired interoperability maturity level
- 4. Develop roadmap document**
  - Clearly stated summary and operating document
- 5. Refine and launch roadmap**



## Hands-on demonstration

# Phase 1 – Qualification & Scoping - Outputs



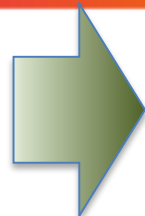
Mini roadmap demo  
Assumptions

Phase 1 is complete:

## Key output:

- ✓ Steering team members
- ✓ Expected benefits
- ✓ Go/No Go decision
- ✓ High-level plan

# Phase 2 – Planning & Preparation



Establish full steering committee



Determine purpose, scope and boundaries of road-mapping effort

Identify technology domains (e.g., IT, power systems, storage chemistry)

Identify stakeholders and experts



Conduct baseline research of current interoperability for key interfaces & technologies (IMM preliminary input)



Phase 3

## Example: Energy Storage Integration for Grid Services

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