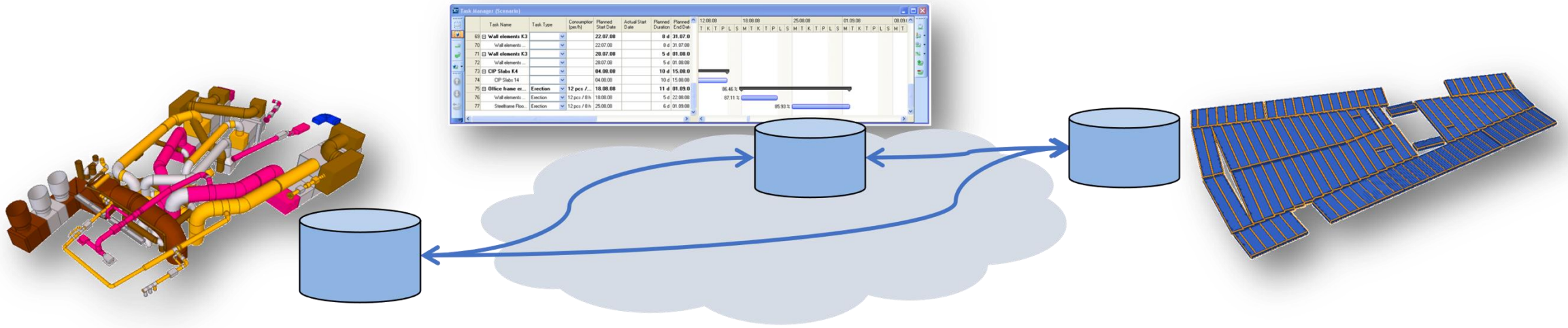

# ISO19650 processes

## Managing and Sharing Construction Data

Computing in Construction

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# ISO 19650 – Structure


ISO 19650-1 – Part 1: **Concepts and principles** (2018)

- The concepts and principles of the information management process.

ISO 19650-2 – Part 2: **Delivery phase of assets** (2018)

- The process for the management and collaborative production of information during the delivery phase of assets.

ISO 19650-3 – Part 3: **Operational phase of assets** (2020)

- The process for the management and collaborative production of information during the operational phase of assets.

ISO 19650-4 – Part 4: **Information exchange** (2022)

- Recommended concepts and principles for the exchange of information between parties throughout the lifecycle of an asset.

ISO 19650-5 – Part 5: **Security-minded approach to IM** (2020)

- A framework for a security-minded approach to managing information relating to sensitive assets.

ISO 19650-6 – Part 6: **Health and safety** (work in progress)

- Expected to concern the production and management of health and safety information on built environment projects.

# Appointments

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# Specific reasons for information exchange

**key decision point**

point in time during the *life cycle* when a decision crucial to the direction or viability of the *asset* is made

**trigger event**

planned or unplanned event that changes an *asset* or its status during its *life cycle* which results in *information exchange*

Project planning decision

Selection of a design alternative

Appointment of a general contractor

Investment decision

During the delivery phase planned ones of these normally align with project stages

Change of ownership

Planned or unplanned maintenance

Surprise with ground or existing structures

Major delay

Accident on site

Resource breakdown

Major design flaw

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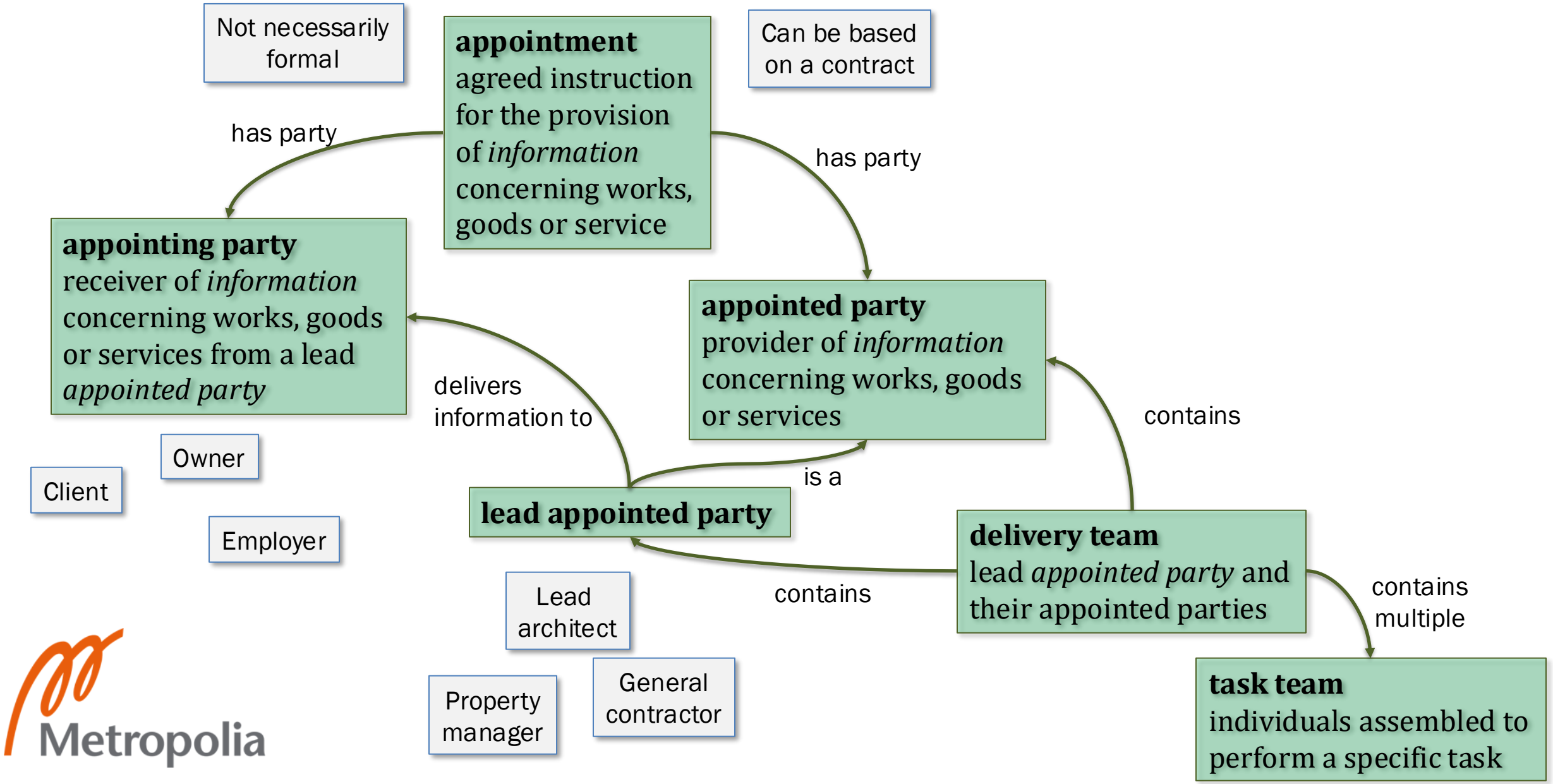
# Teams and appointing vs appointed parties

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# Essential characteristics of appointed parties

**capability**

measure of ability to perform and function

- BIM modeling
- Architectural design
- Structural engineering
- Architectural design of high-rise buildings
- Cost accounting
- Computational design

relate to skill, knowledge, or expertise to manage *information*

**capacity**

resources available to perform and function

- Number of designers
- Percentage of unallocated work hours
- Available computing power

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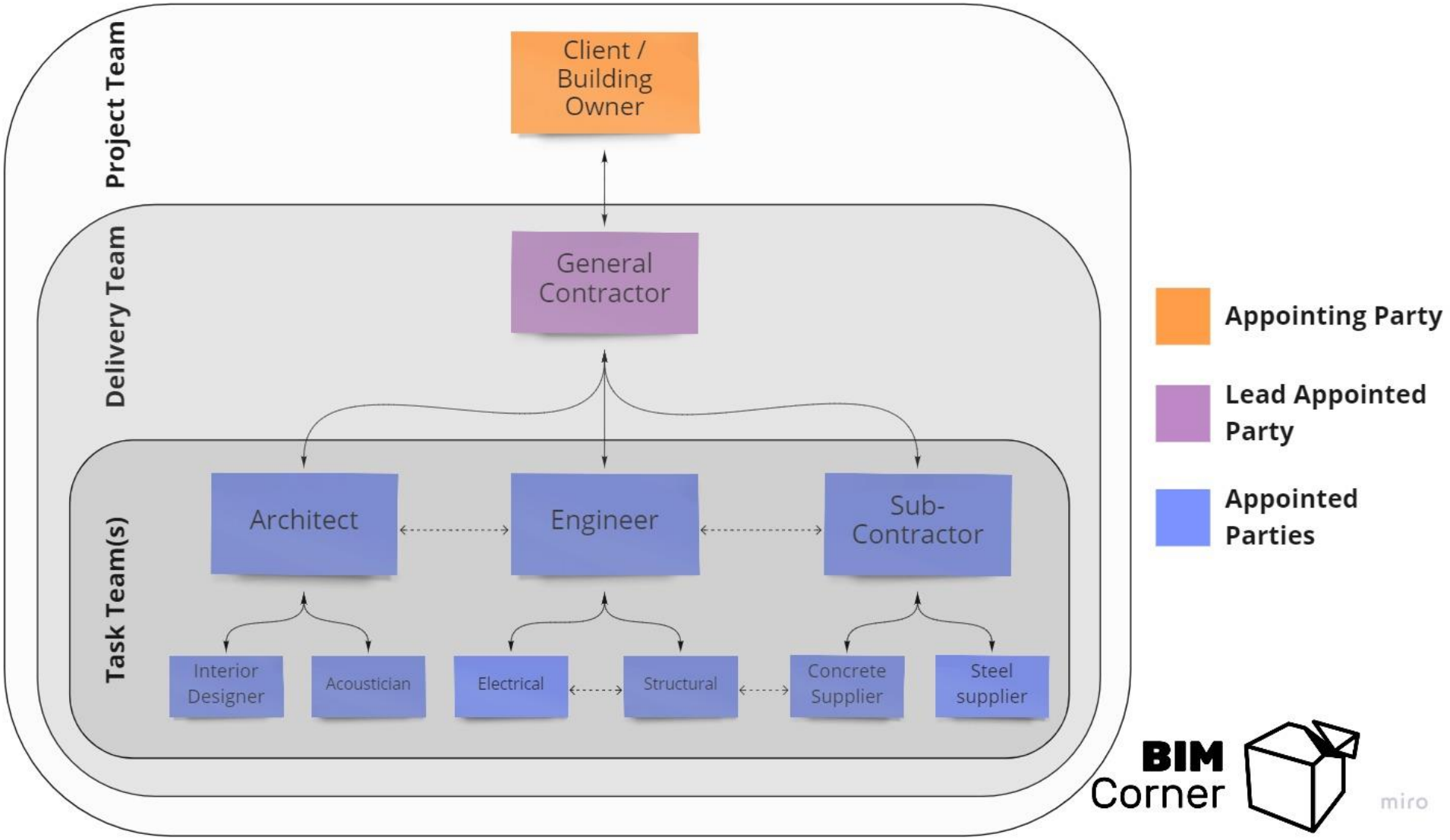
# Example of an appointment

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BIM Corner

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# Delivery phase processes

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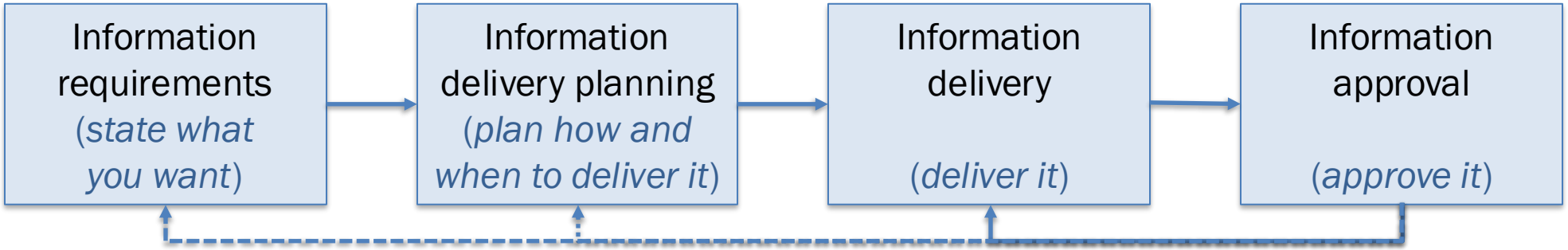
# Specification and planning of information delivery

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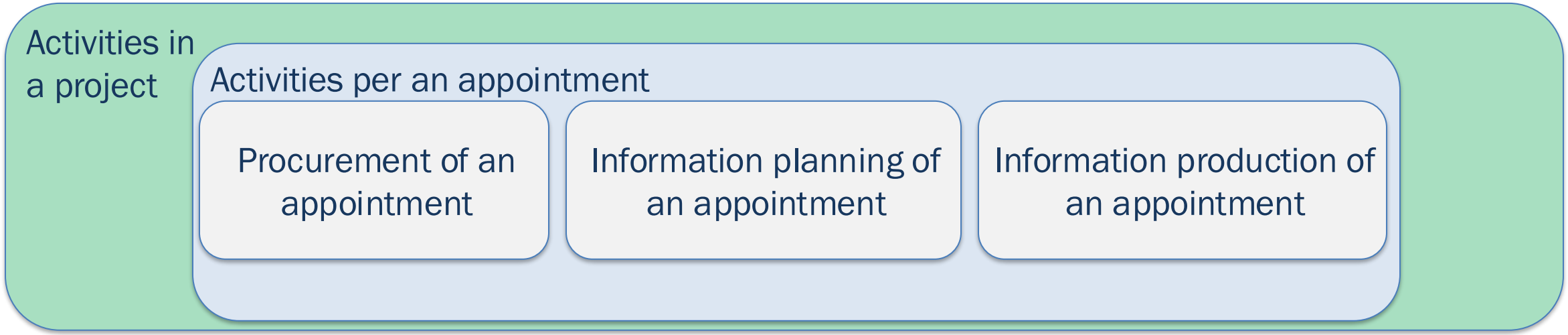
# Delivery phase: Sub-division of processes

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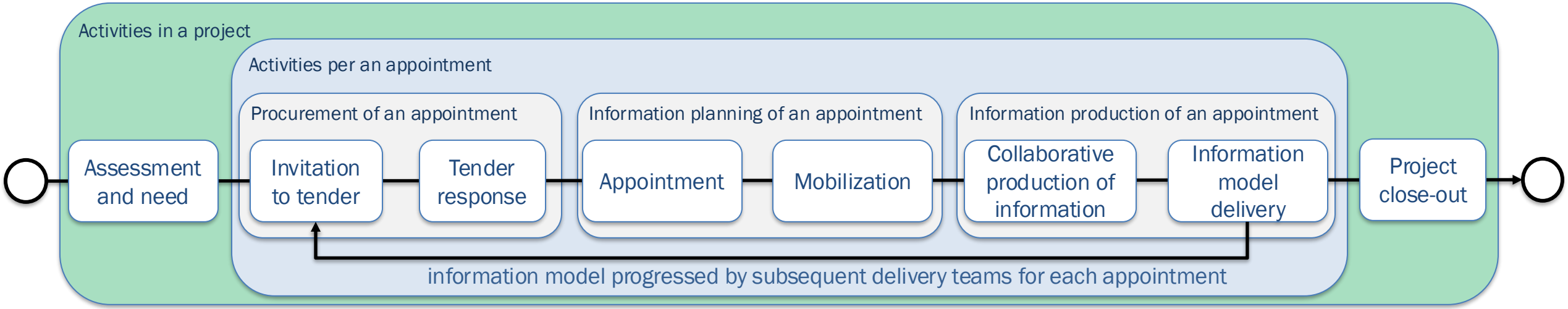
# Delivery phase: Information management process

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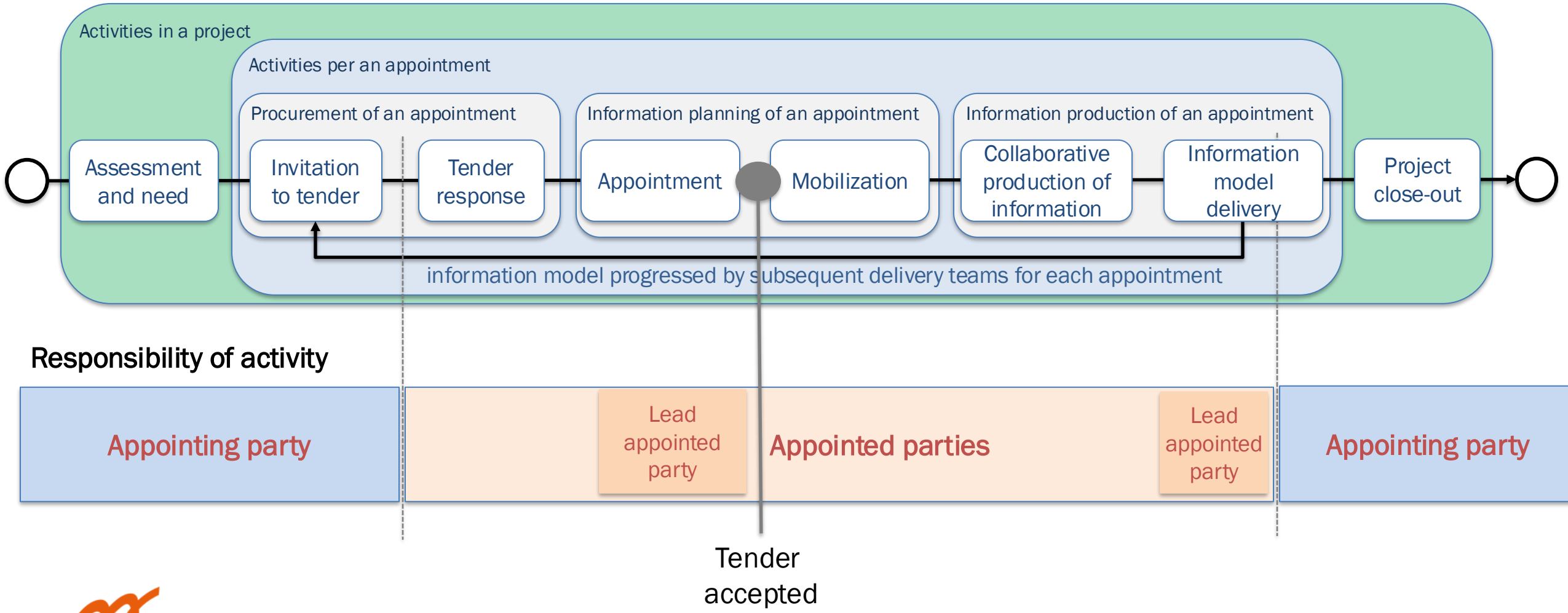
# Delivery phase: Information management process

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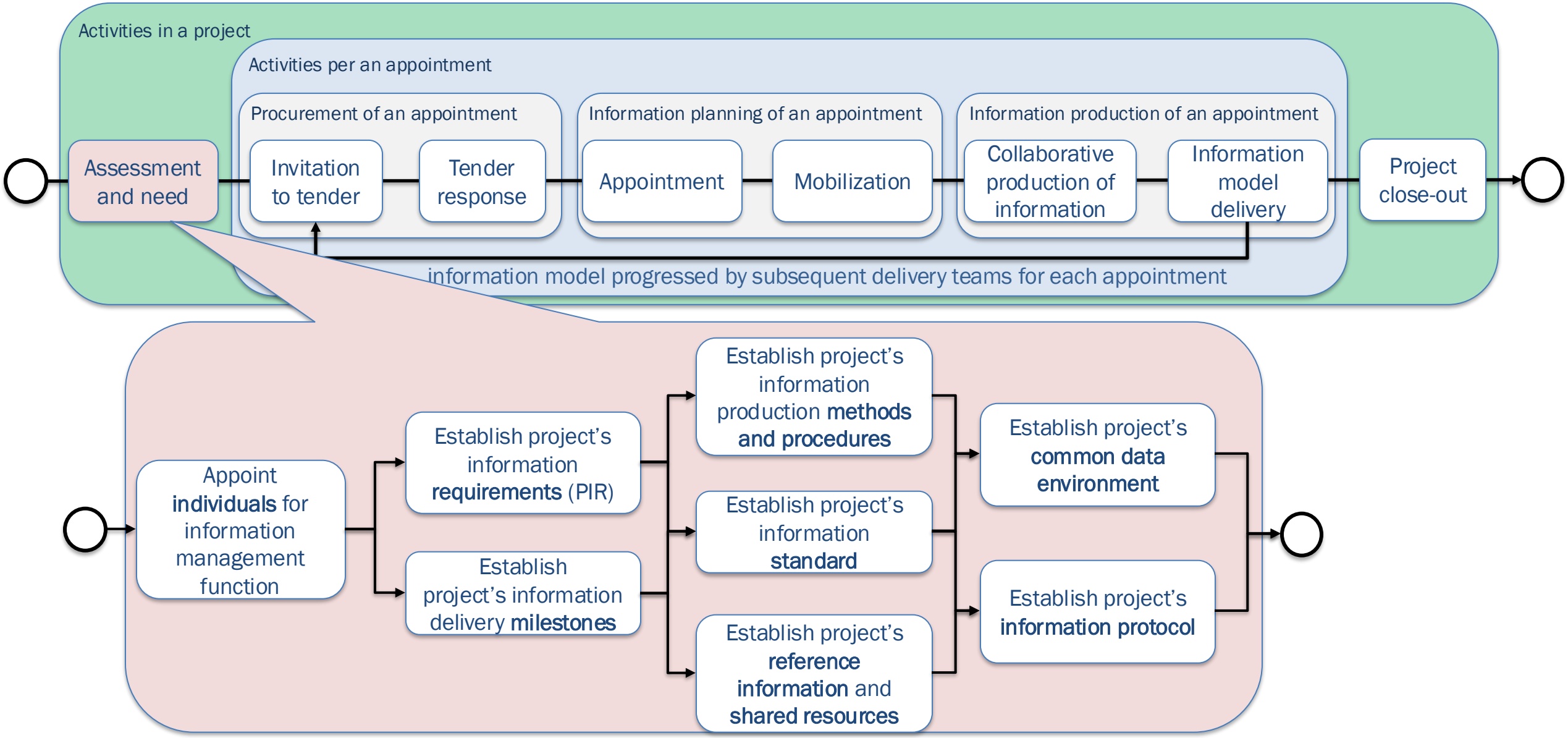
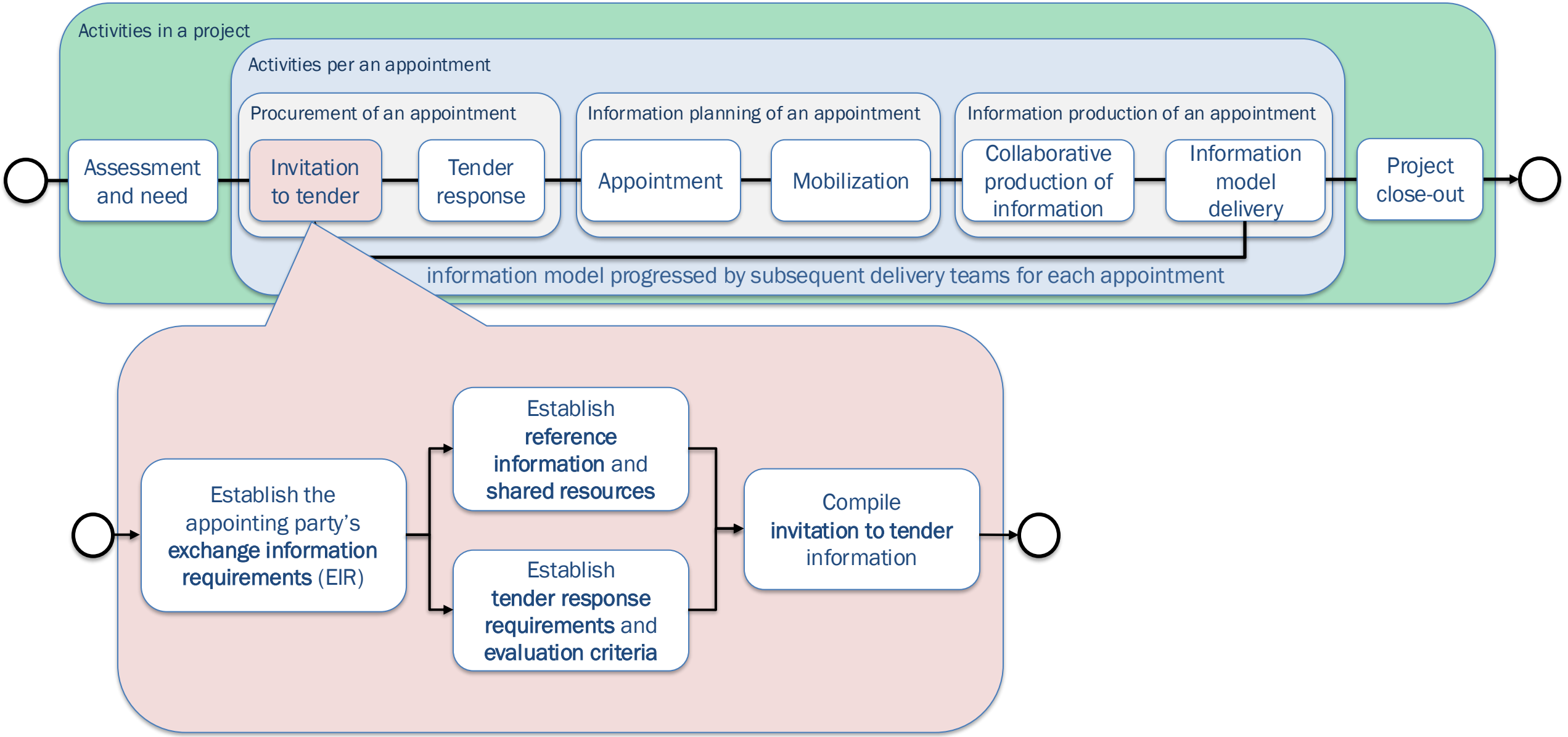
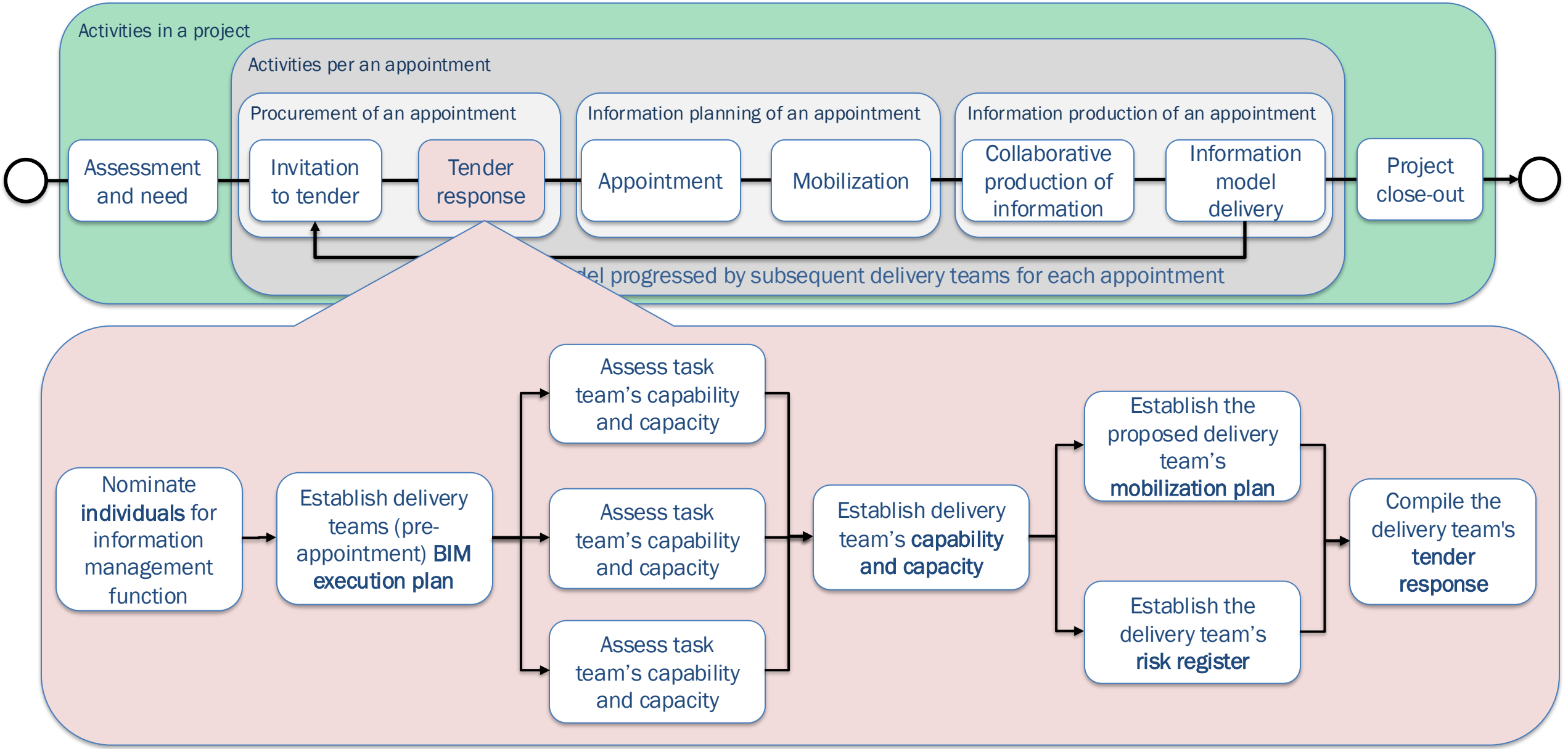
# Delivery phase: Assessment and need



# Delivery phase: Invitation to tender



# Delivery phase: Tender response



# BIM Execution Plan

- the proposed names and professional résumés of the individuals;
- the delivery team's information delivery strategy, containing:
  - the delivery team's approach to meeting the appointing party's exchange information requirements,
  - a set of objectives/goals for the collaborative production of information,
  - an overview of the delivery team's organizational structure and commercial relationships, and
  - an overview of the delivery team's composition, in the form of one or more task teams;
- the proposed federation strategy to be adopted by the delivery team;
- the delivery team's high-level responsibility matrix (elements of the information model/deliverables)
- additions to the project's information production methods and procedures that the delivery team require to facilitate the effective:
  - capture of existing asset information,
  - generation, review, approval and authorization of information,
  - security and distribution of information, and
  - delivery of information to the appointing party;
- additions to the project's information standard to facilitate the effective:
  - exchange of information between task teams,
  - distribution of information to external parties, or
  - delivery of information to the appointing party;
- a proposed schedule of software (including versions), hardware and IT infrastructure to adopt

# Mobilization plan

- testing and documenting the proposed information production methods and procedures;
- testing the information exchanges between task teams;
- testing the information delivery to the appointing party;
- configuring and testing the project's CDE
- configuring and testing the delivery team's (distributed) CDE and its connectivity to the project CDE
- procuring, implementing, configuring and testing additional software, hardware and IT infrastructure;
- developing additional shared resources to be used by the delivery team;
- developing and delivering education (knowledge required) to delivery team members;
- developing and delivering training (skills required) to the delivery team members;
- recruiting additional members of the delivery team to achieve the required capacity
- supporting individuals and organizations that join the delivery team during the appointment.

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# Risk register

The prospective lead appointed party shall consider risks associated with:

- assumptions the delivery team has made in relation to the appointing party's exchange information
- requirements;
- meeting the appointing party's project information delivery milestones;
- the contents of the project's information protocol;
- achieving the proposed information delivery strategy;
- adopting the project's information standard and information production methods and procedures;
- inclusion (or non-inclusion) of proposed amendments to the project's information standard; and
- the mobilization of the delivery team to achieve the required capability and capacity.

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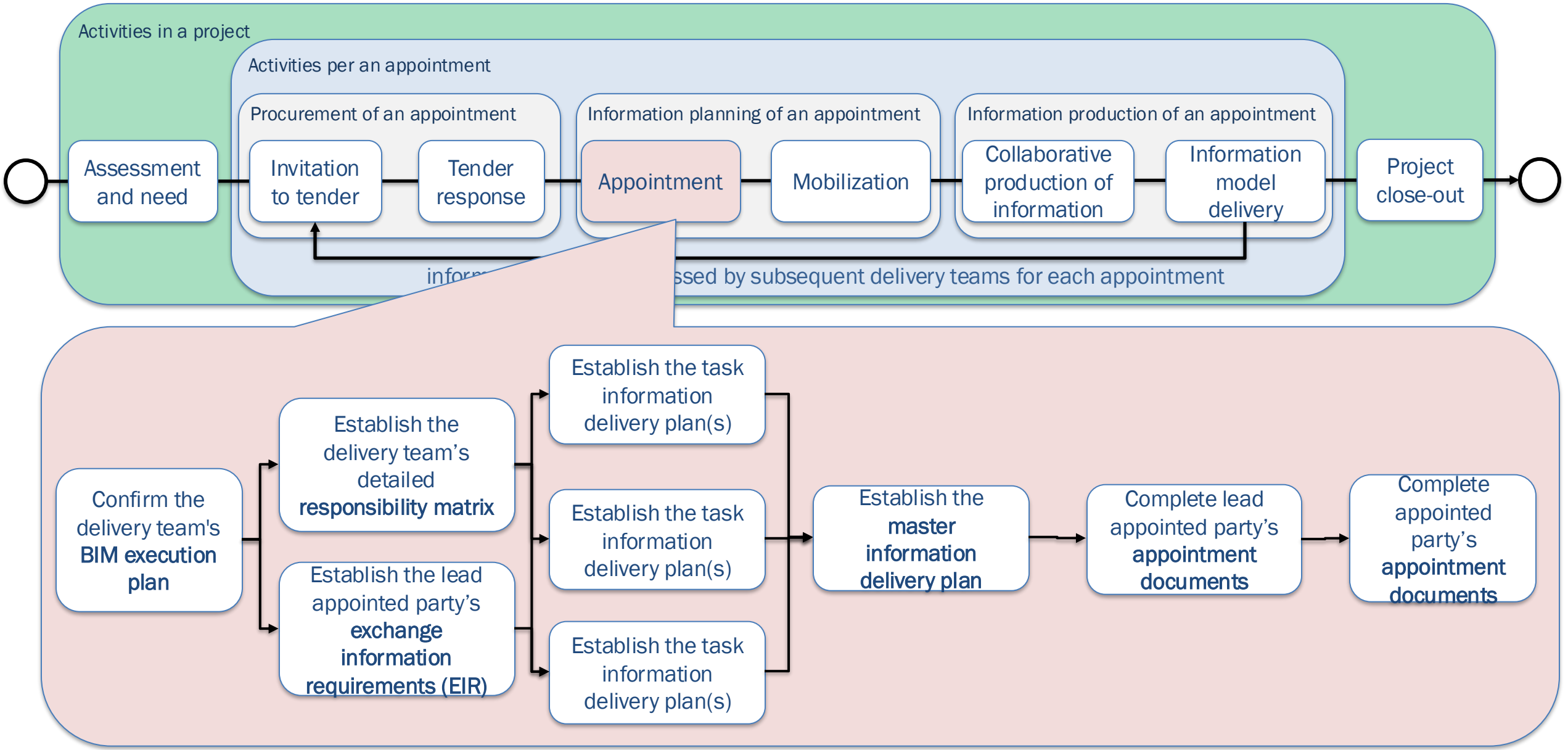
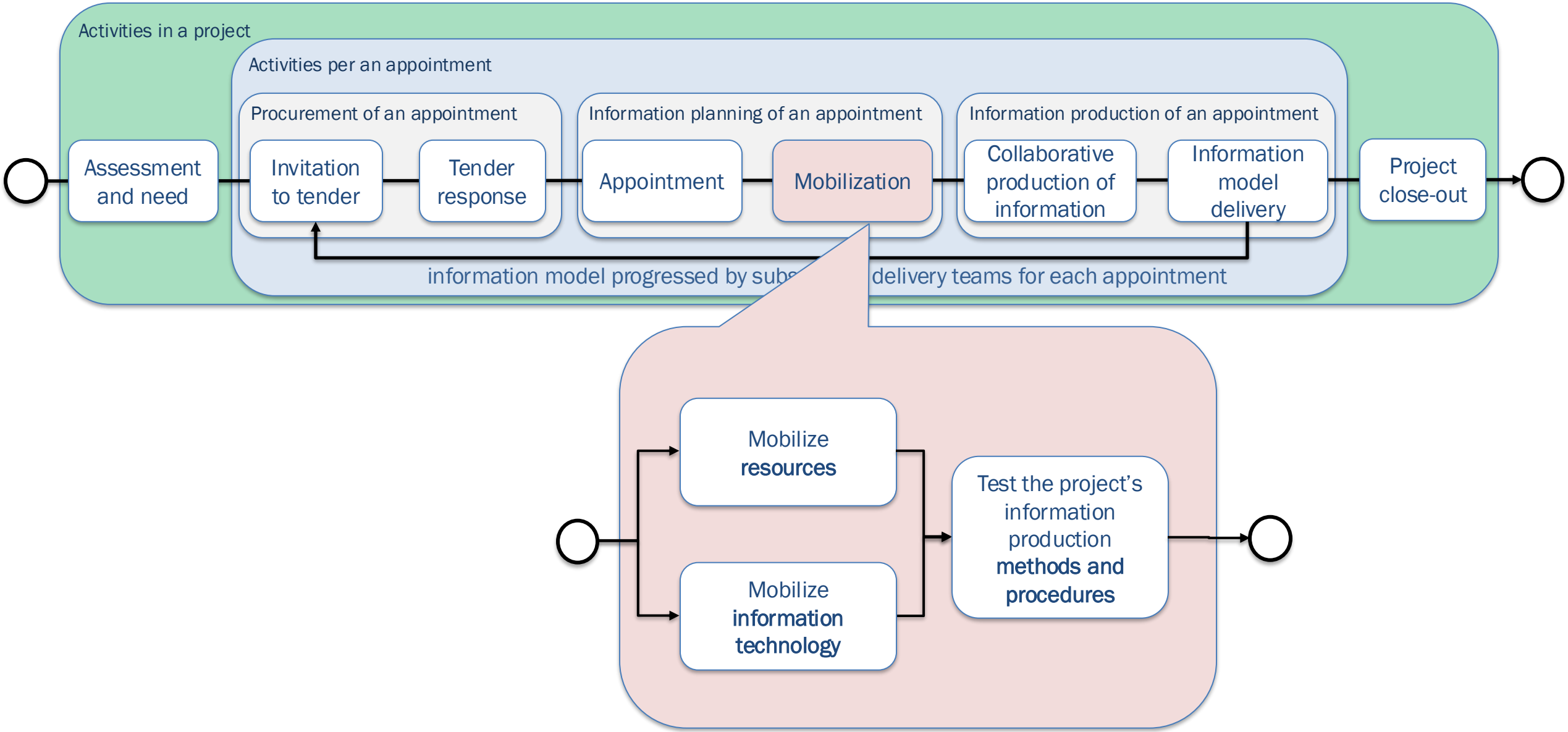
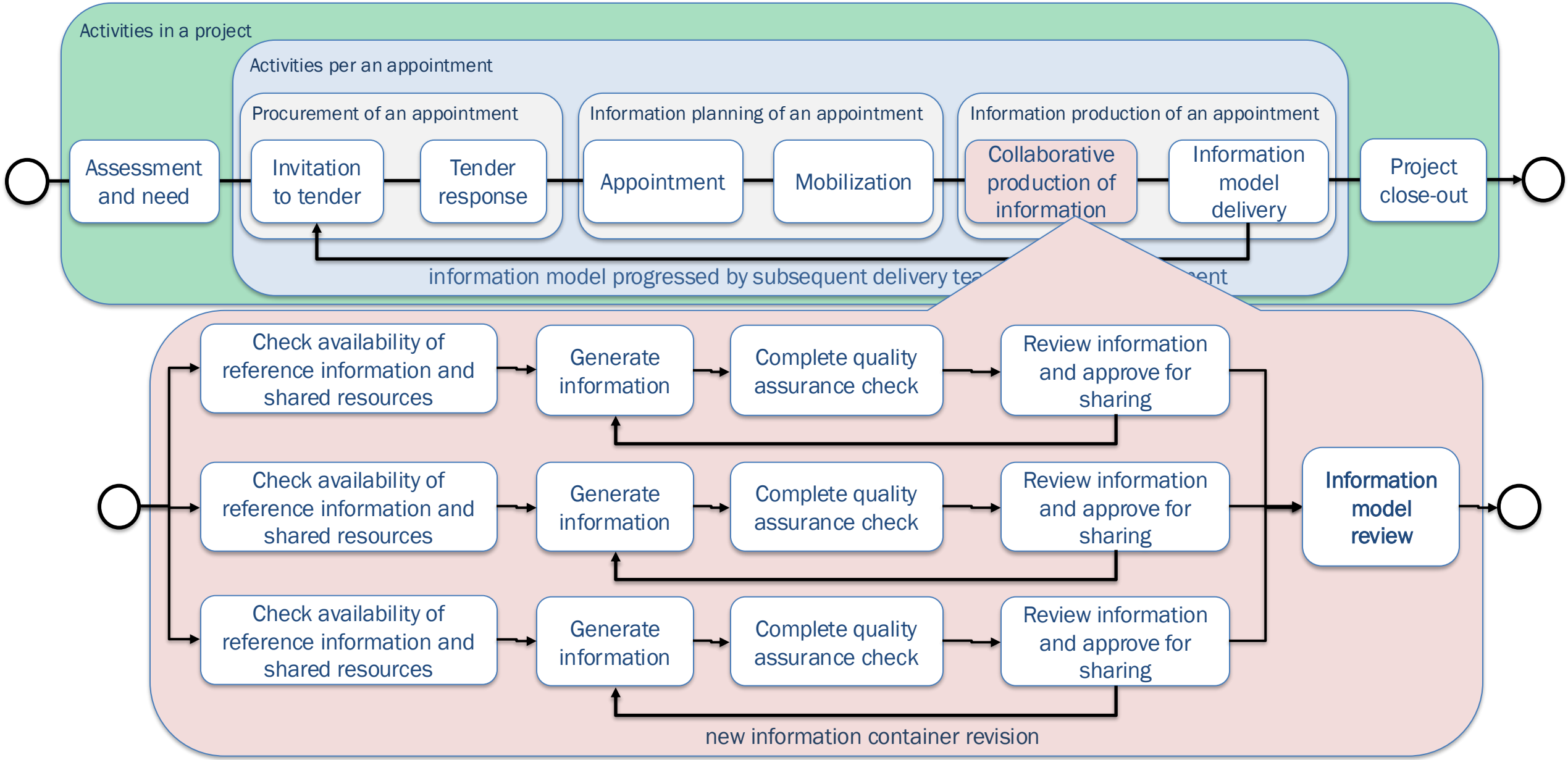
# Delivery phase: Appointment



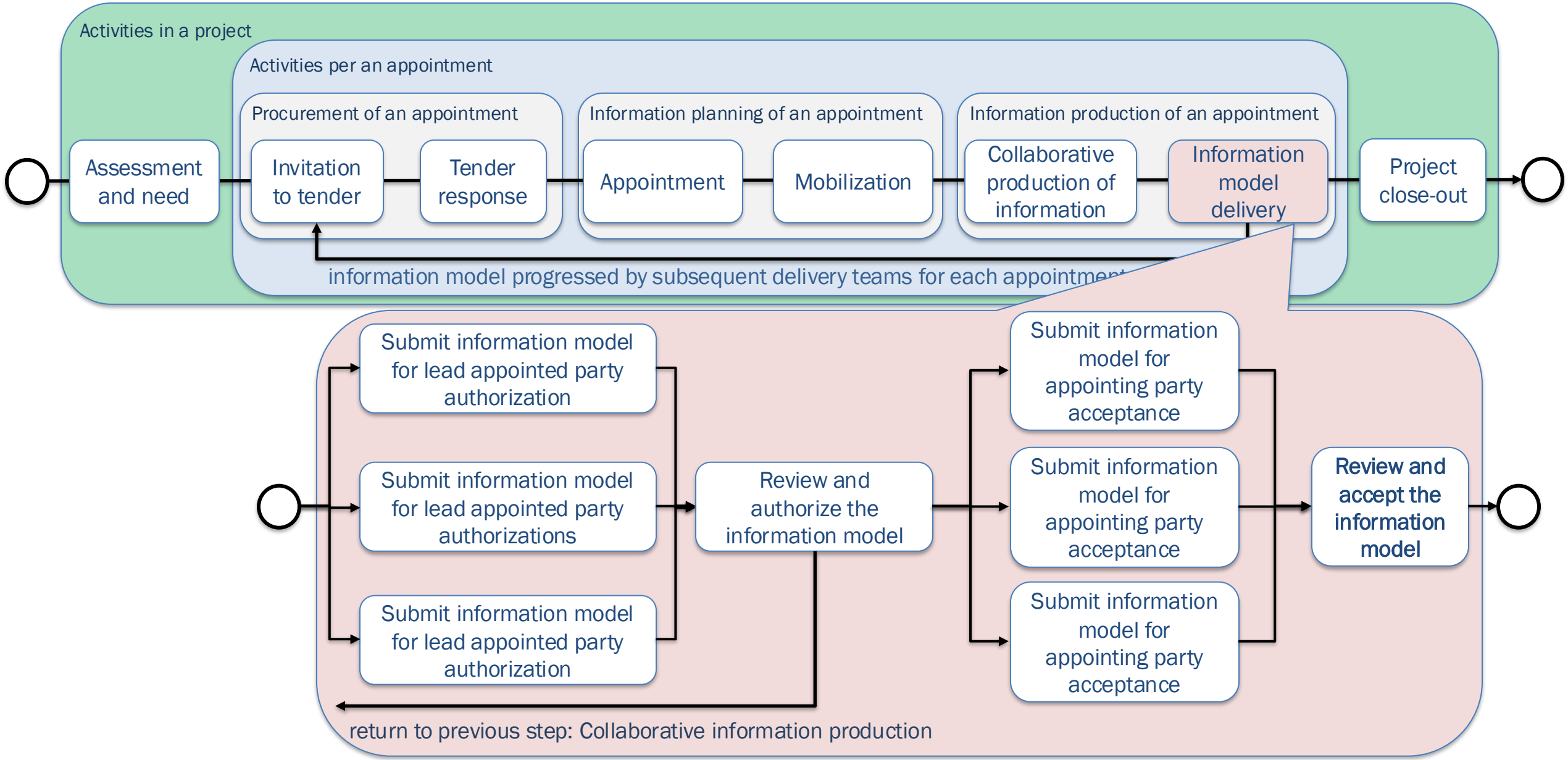
# Delivery phase: Mobilization



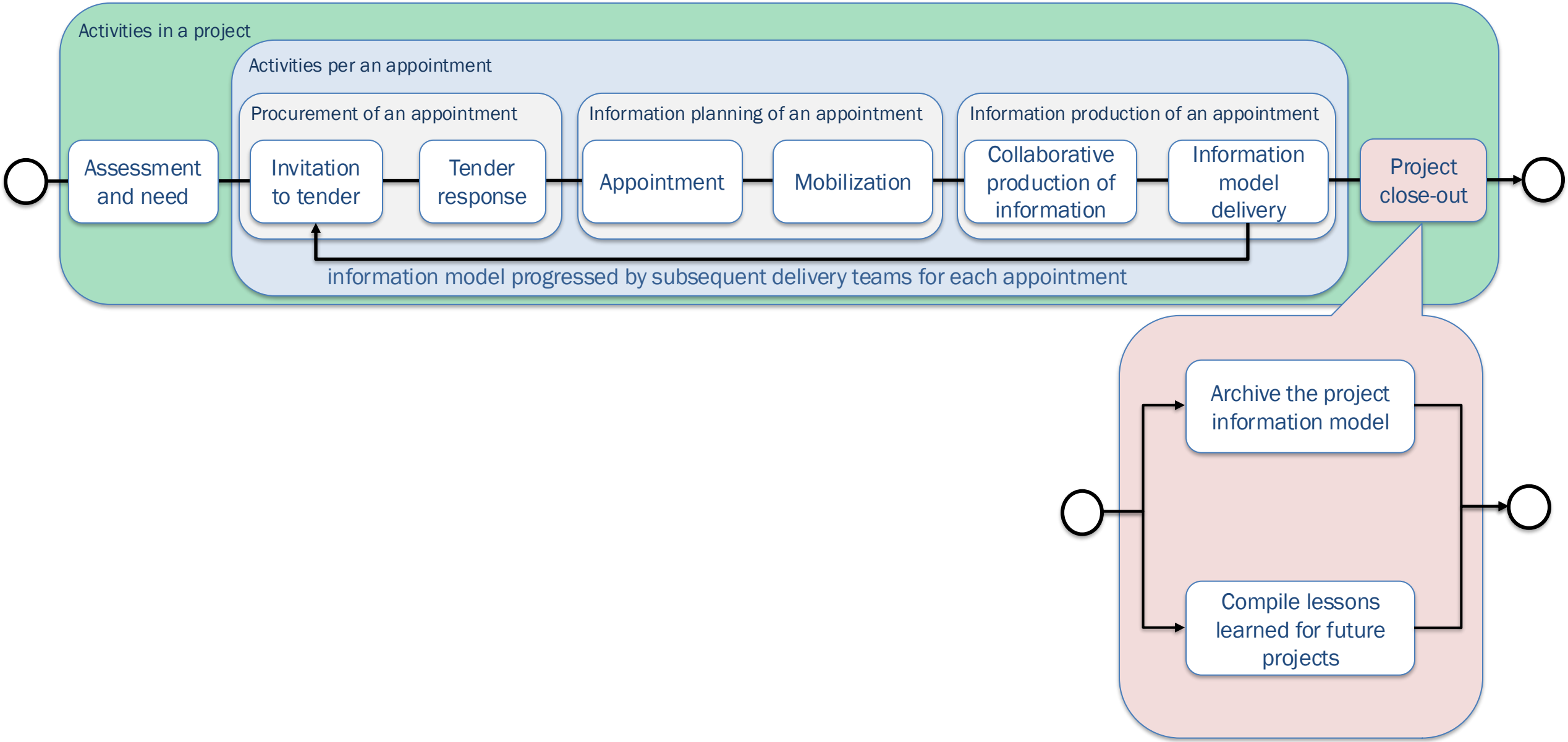
# Delivery phase: Collaborative information production



# Delivery phase: Information model delivery



# Delivery phase: Project close-out



# Operational phase – Information management processes

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# Operational phase: Needs for asset information

- planning and budgeting;
- demand management and customer expectation policy;
- capital investment and life cycle costing;
- innovation and change management;
- asset modifications, refurbishment, replacement, reuse/redeployment, disposal, recycling;
- spares, materials and purchasing;
- data, information and knowledge management;
- contractor and supplier management;
- human resources, skills development and competencies;
- maintenance, inspection, condition and performance monitoring;
- contingency planning and emergencies;
- energy efficiency and environmental aspects, for example renewable resources, recycling, waste management, air purity, hygiene;
- risk assessment and management;
- safety, health and environmental management.

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# Operational phase: Example OIR

## Concerns that drive the organizational information requirements

- the financial benefits of planned improvement activities;
- a means to predict the performance of the asset to support operational decision making;
- the operational and financial impact of asset unavailability or failure;
- the life cycle cost comparisons of alternative capital investments;
- expiry dates of warranties;
- an assessment of the end of an asset's economic life,
  - for example, when the asset related expenditure exceeds the associated income;
- quality targets for the performance of assets;
- service levels for asset management and facility management;
- the cost of specific activities (activity-based costing)
  - for example, the total cost of maintaining a specific asset/asset system;
- asset replacement values;
- financial analysis of planned income and expenditure;
- the financial and resource impact of deviating from plans that can affect asset's availability or performance
  - for example, the financial impact of deferring the maintenance of a specific generator by six months
- overall financial performance;
- identification, assessment and control of asset related risks.

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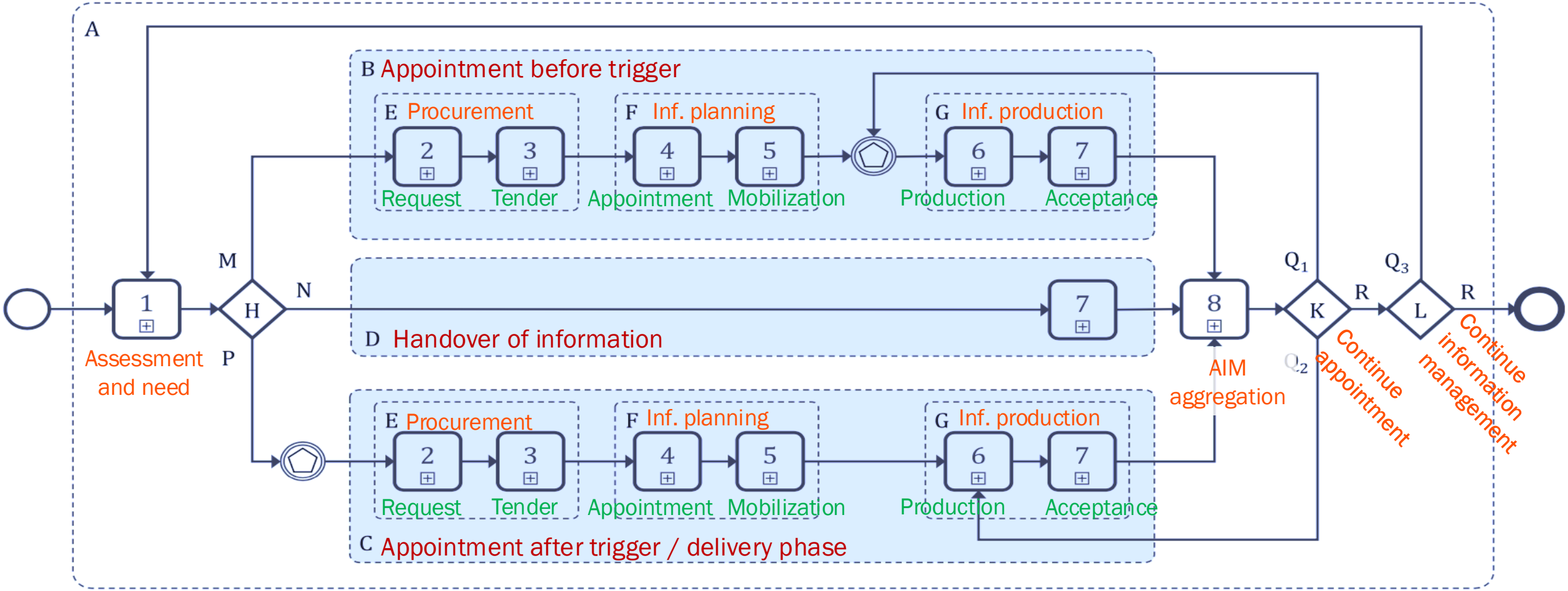
# Operational phase: Information management process

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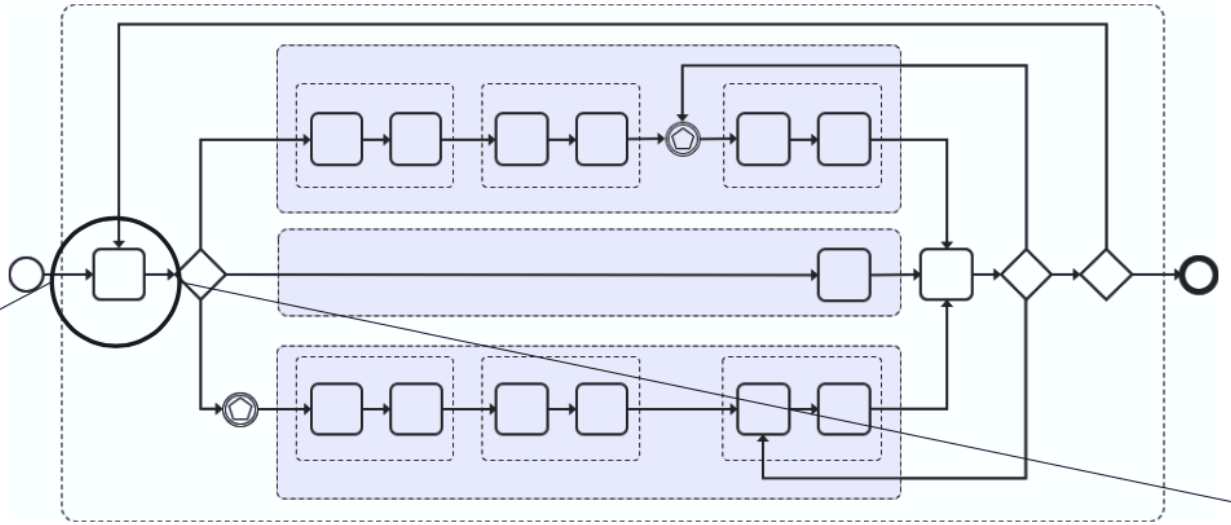
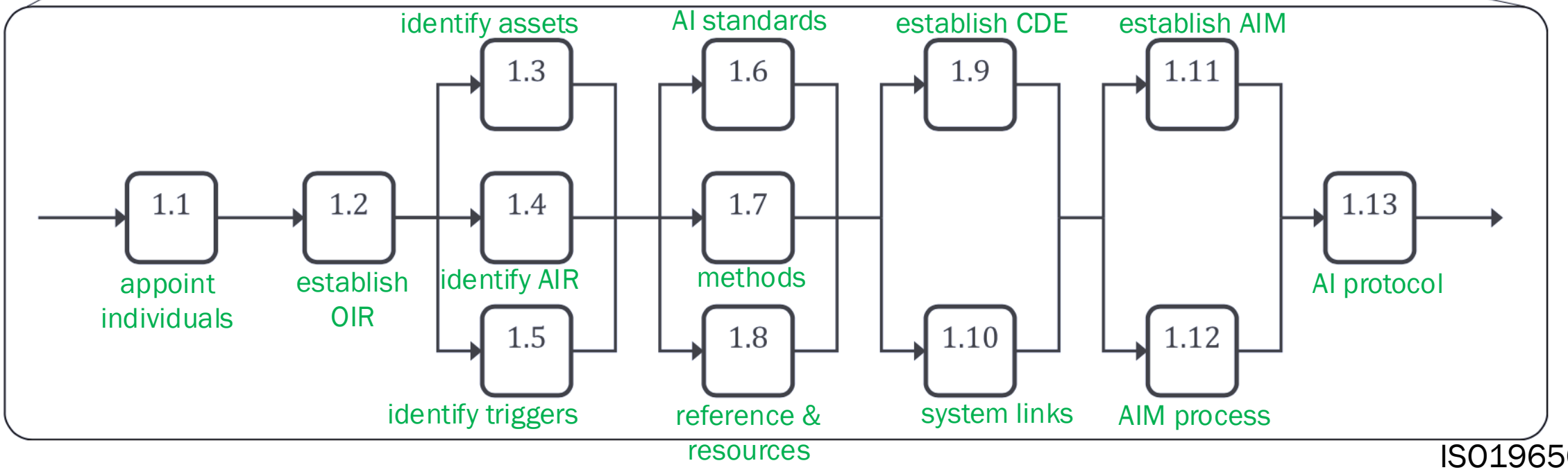
# Operational phase: Assessment and need



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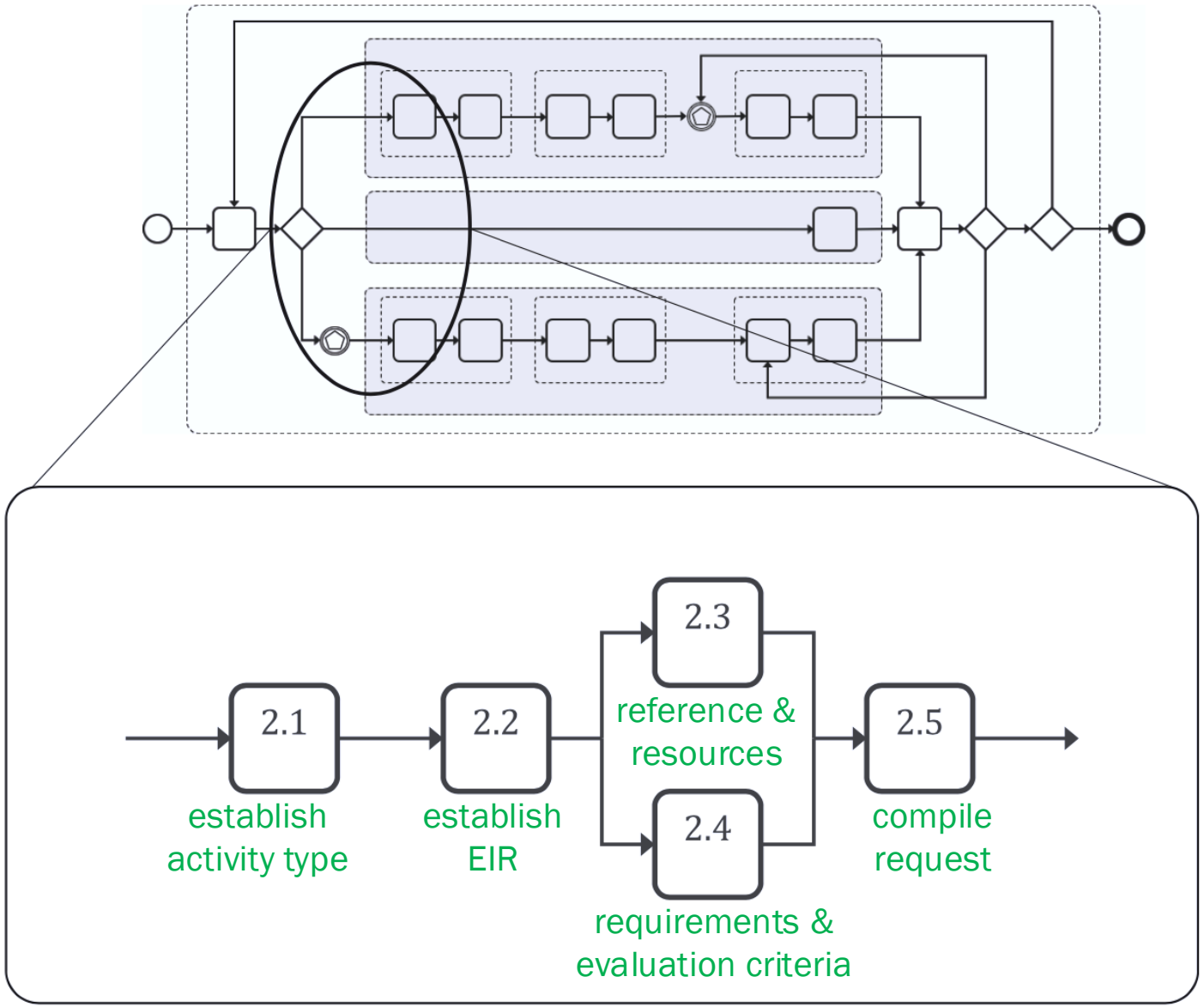
# Operational phase: Invitation to tender

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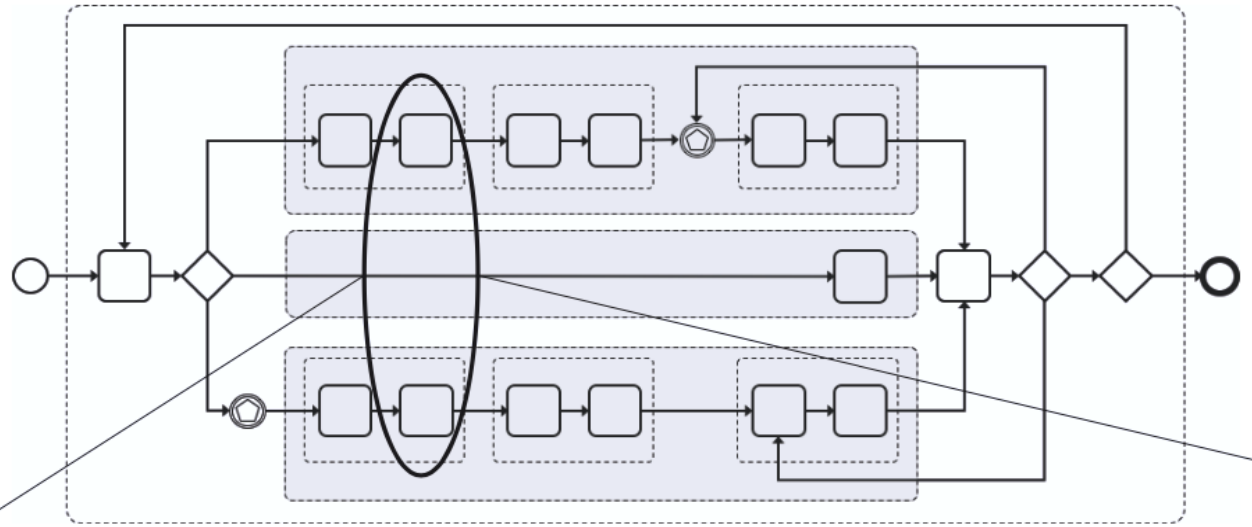
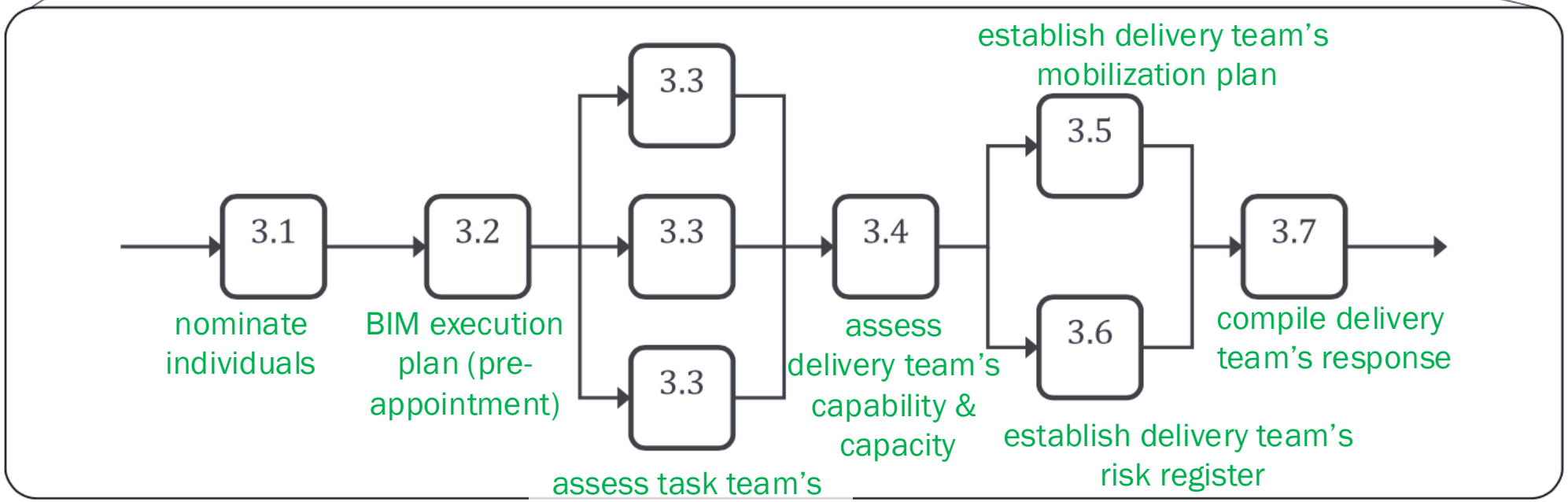
# Operational phase: Tender response

By the (prospective) lead appointed party



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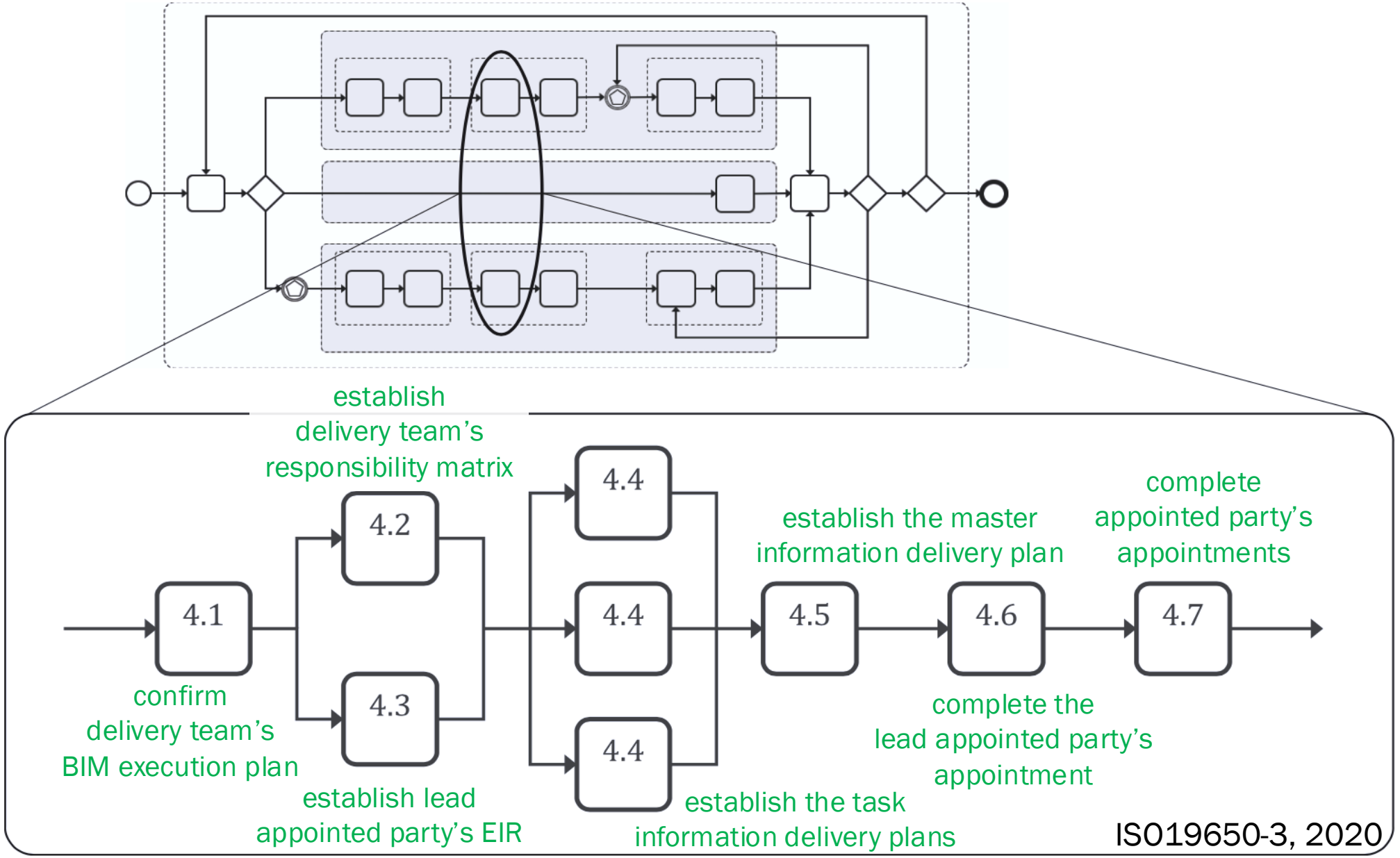
# Operational phase: Appointment

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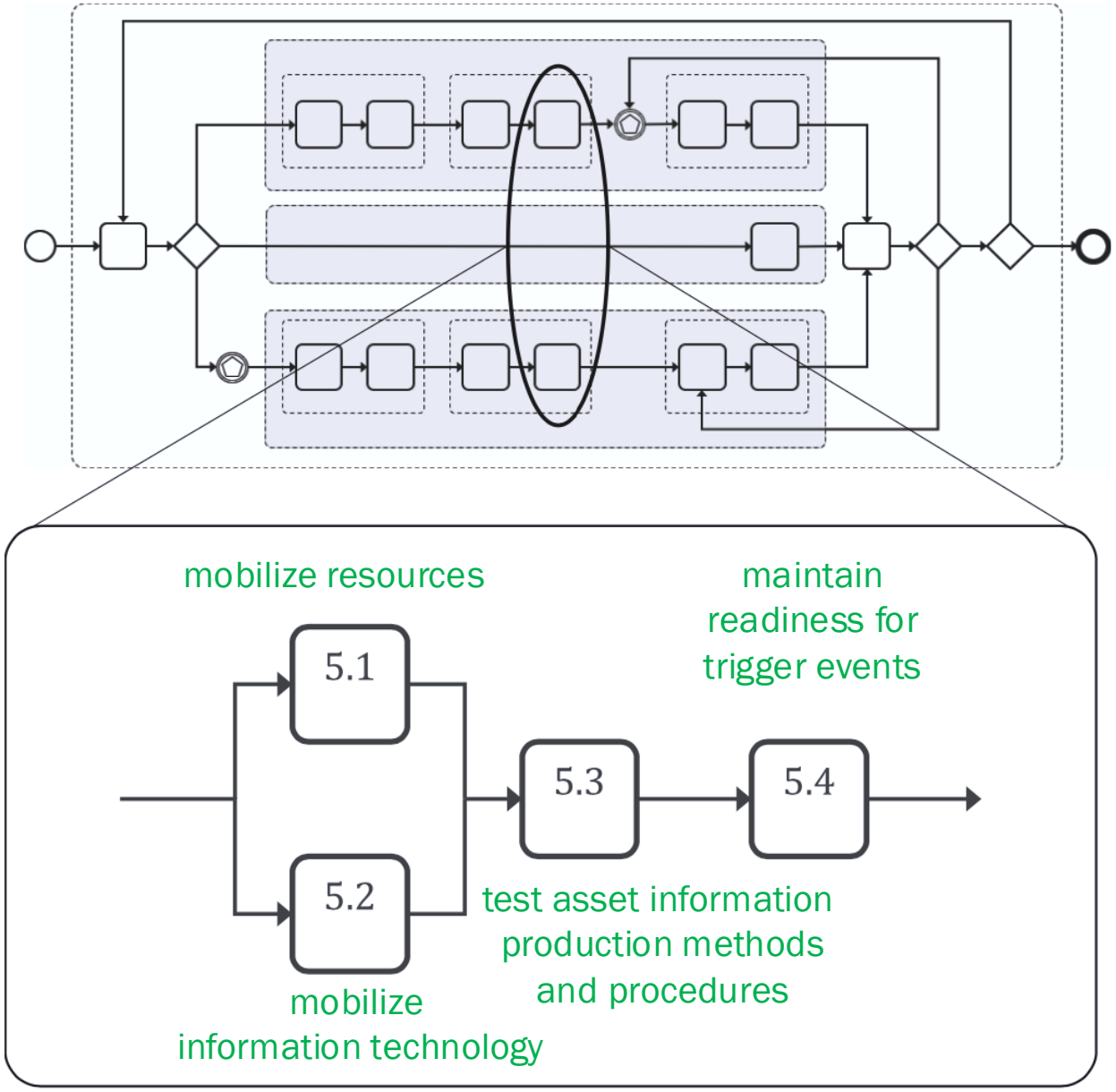
# Operational phase: Mobilization

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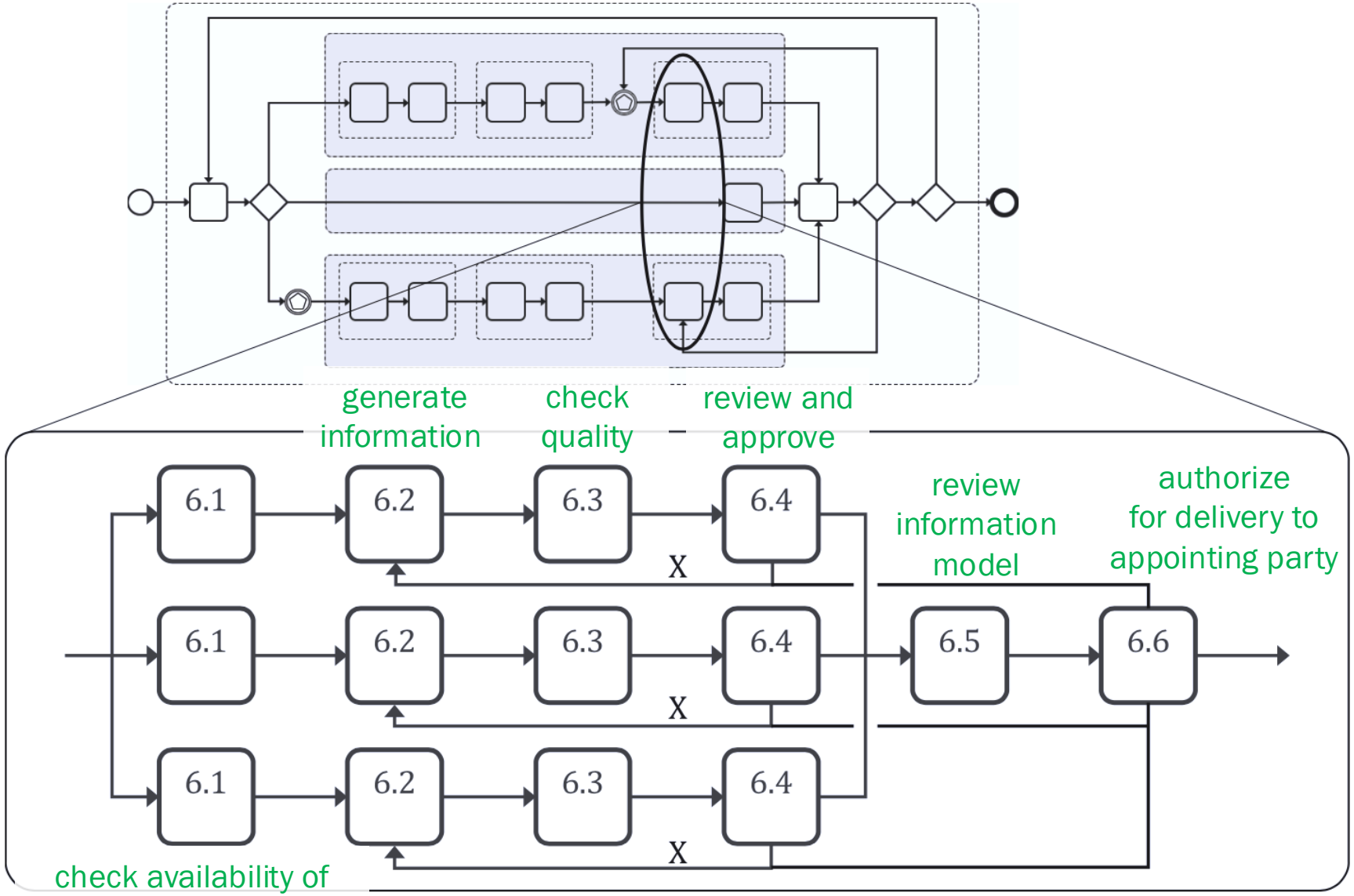
# Operational phase: Information production

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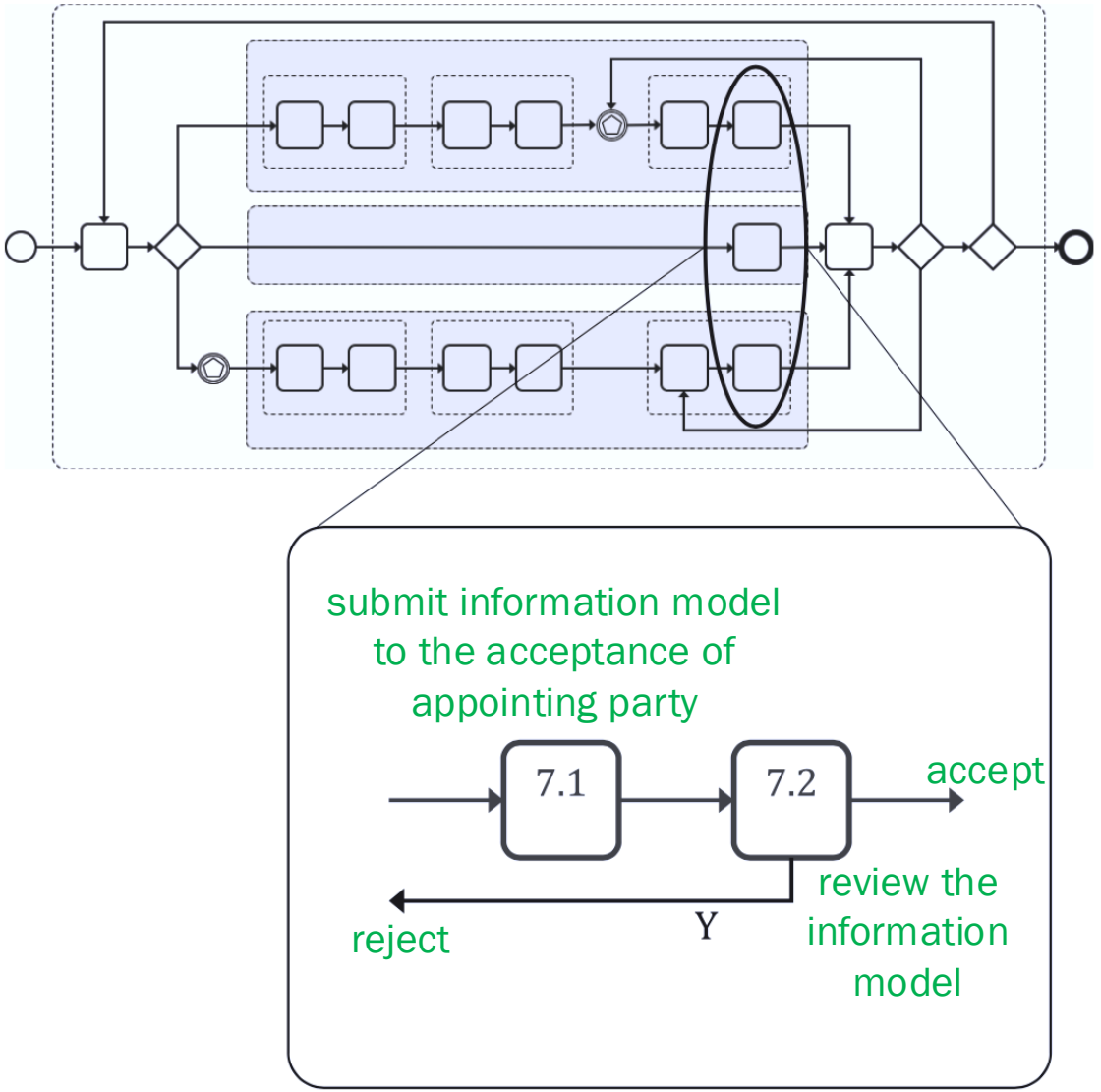
# Operational phase: Acceptance by appointing party

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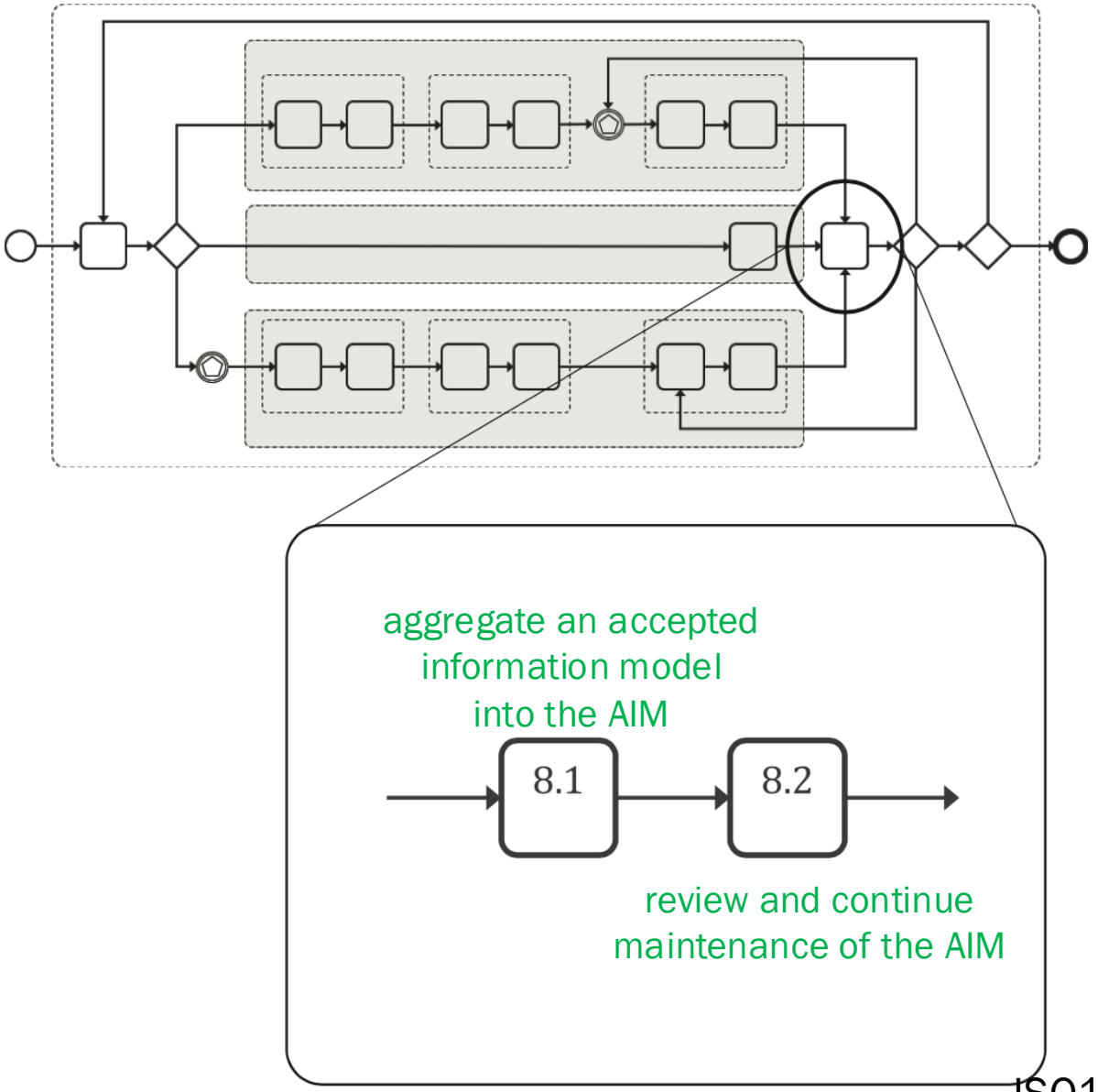
# Operational phase: AIM aggregation

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ISO19650-3, 2020

# Thank you!

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