Managing Consent in Workflows under GDPR

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- **data protection regulation** *for all individuals within European Union*
- *since* **25 May 2018**

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- Organizations processing personal data must **comply with GDPR!**

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- Processing of personal data must have **lawful basis**

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purpose: the reason for which personal data is processed (e.g. marketing, treatment etc.)

CONSENT & REVOCATION UNDER GDPR

GDPR Article 4 §11 - *Definitions*

"any **freely given, specific, informed and unambiguous** […] clear affirmative action"

by which a data subject agrees to the processing of his / her personal data

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GDPR Article 7 § 3 - *Conditions for consent* → Revocation

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OUTLINE

- Motivation: Privacy by Design via Workflows
- Research Problem
- Foundation
- Approach
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A Workflow includes a series of tasks *to achieve a goal*

- also how tasks are performed, in what order, and by whom

PRIVACY BY DESIGN VIA WORKFLOWS

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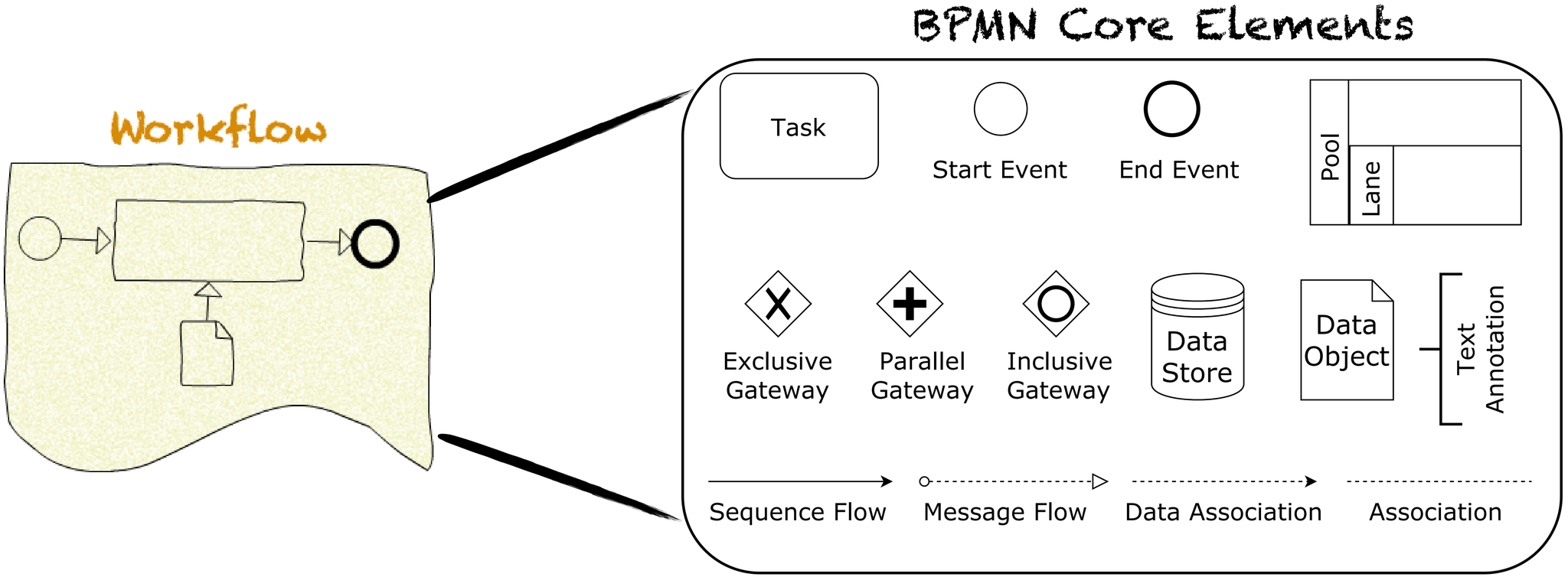

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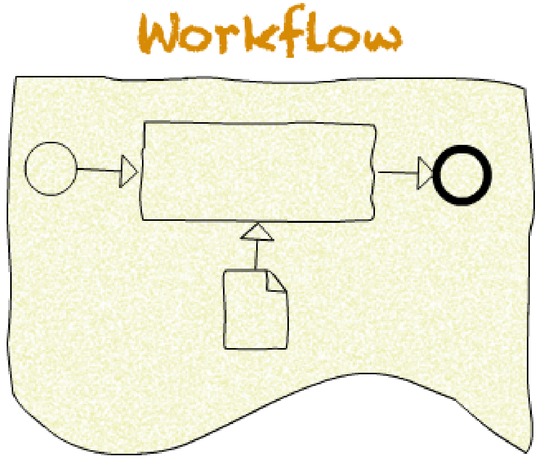

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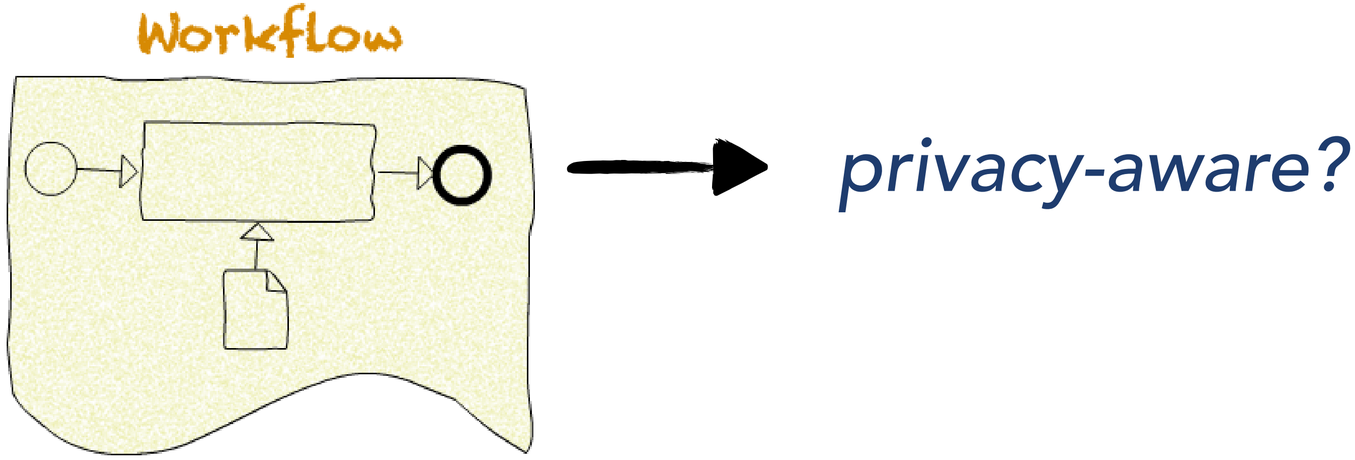

privacy-aware?

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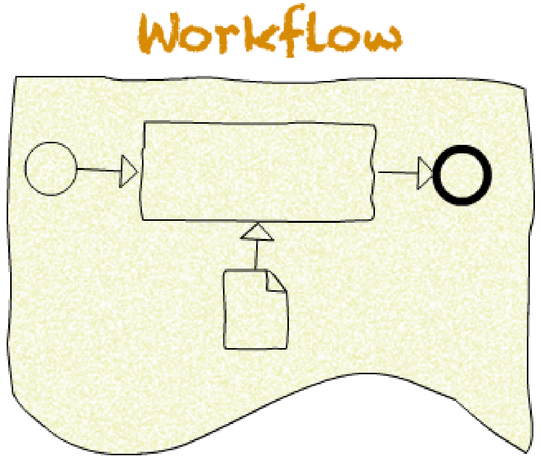

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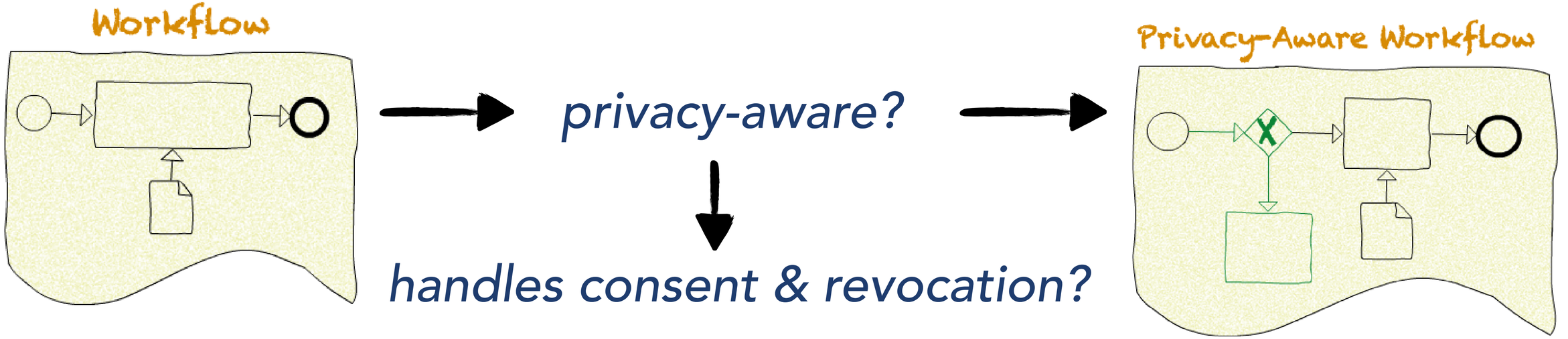

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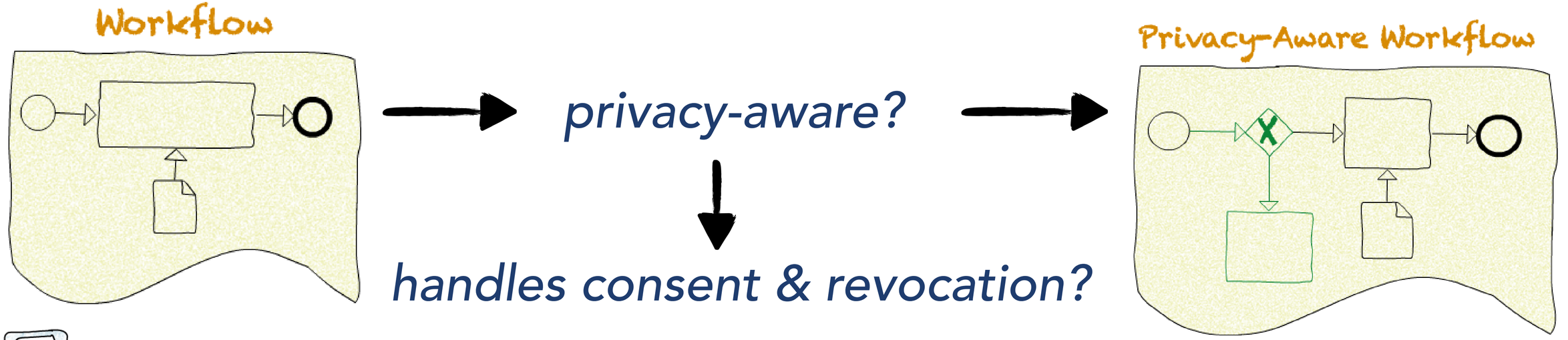

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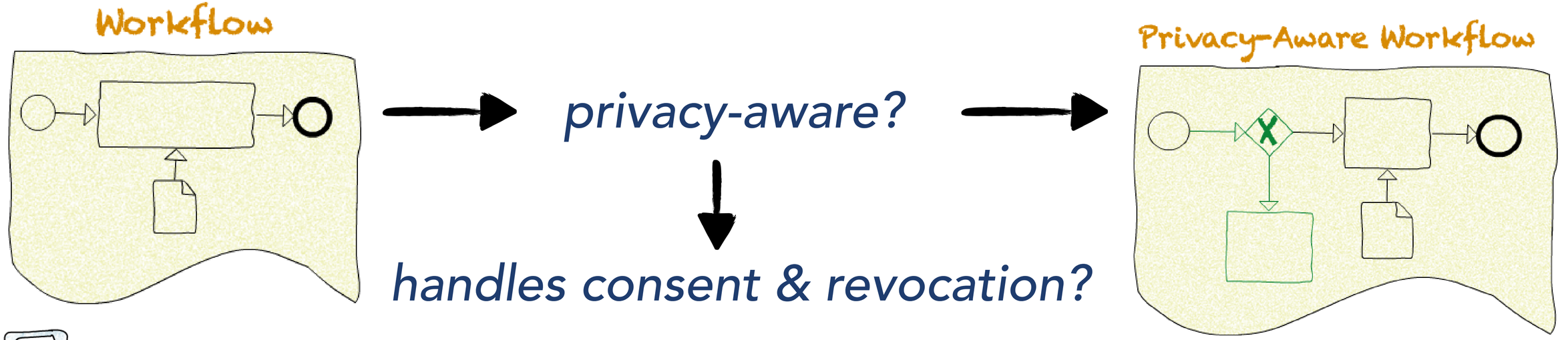

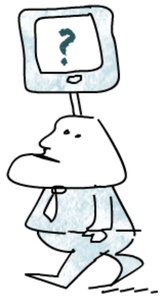

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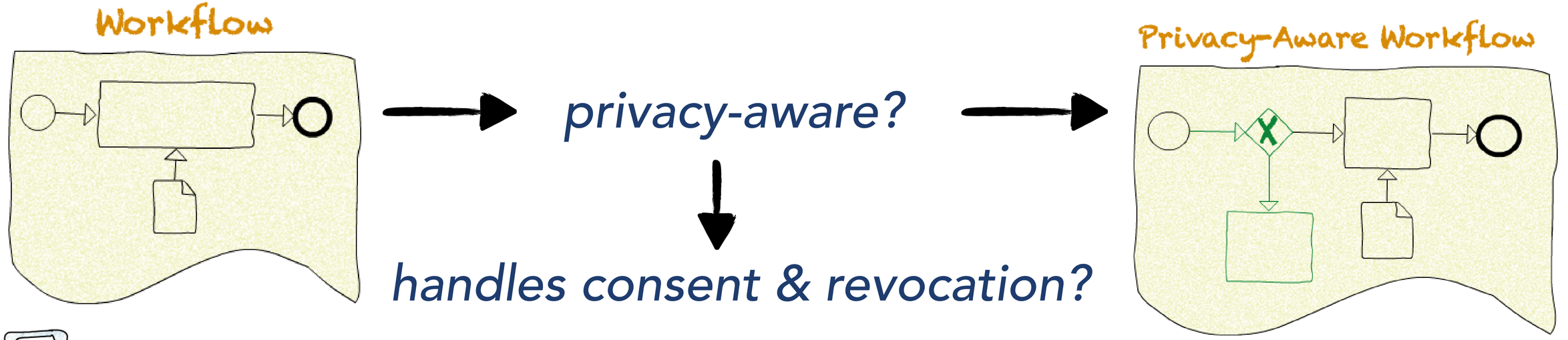

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Approach: Design Patterns

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  - **Data-Aware Workflow** 
  - **Consent Policy** 
  - **Consent Form** 
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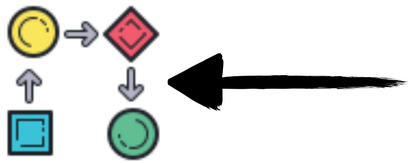

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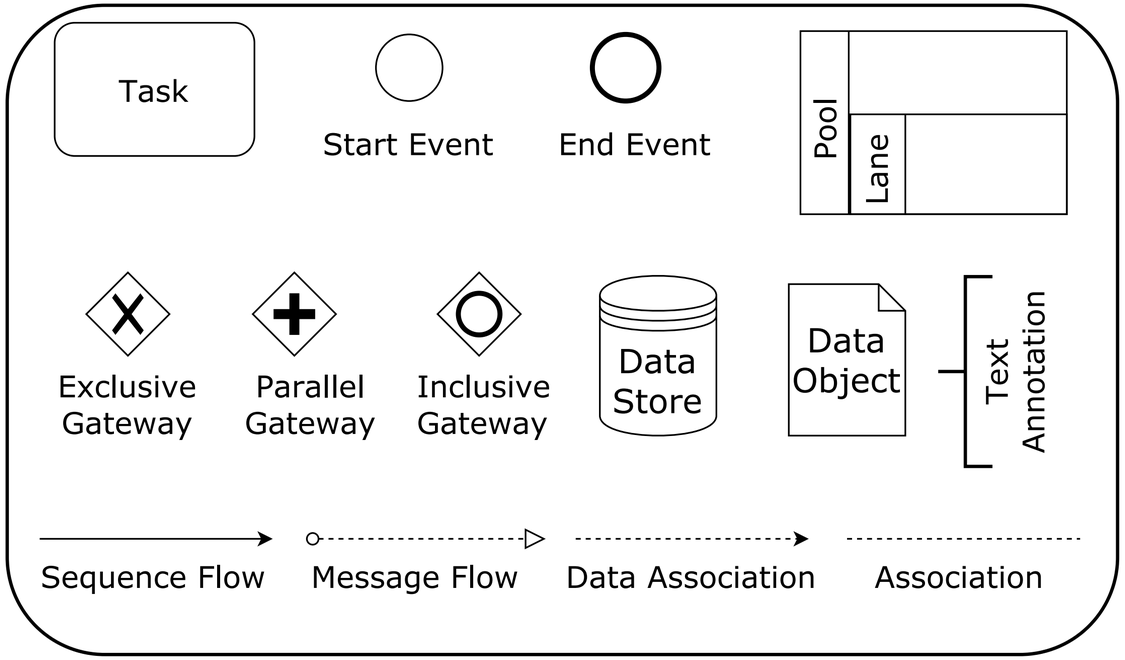
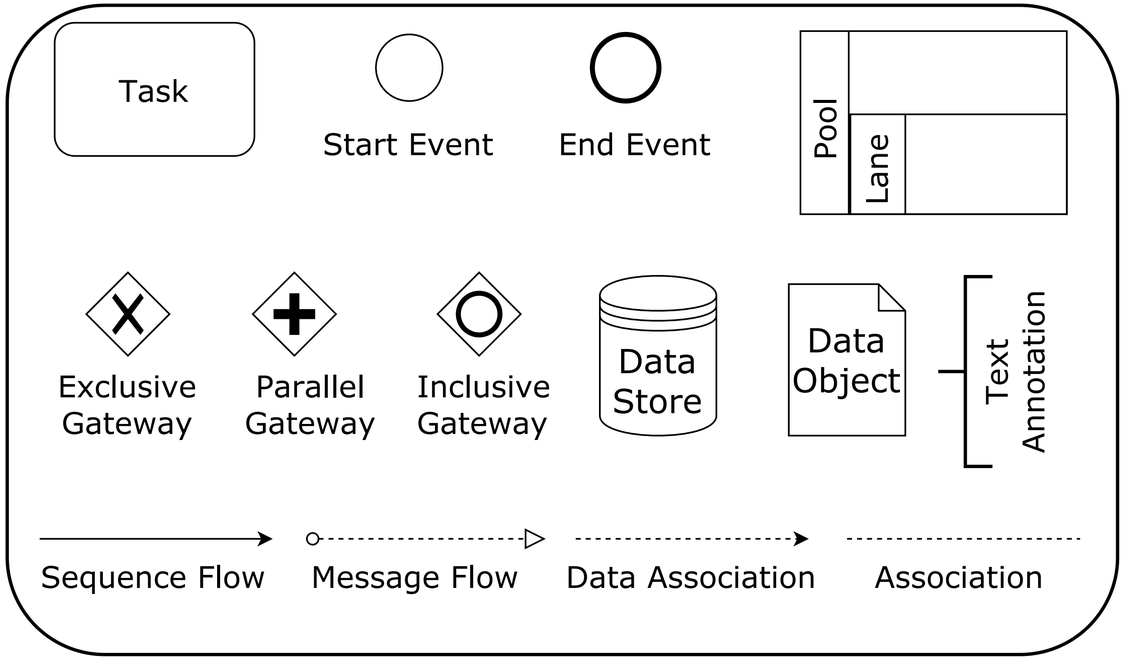
Which *information* should be given to data subject for a valid consent

Workflow



BPMN Core Elements

Workflow → Data-Aware Workflow



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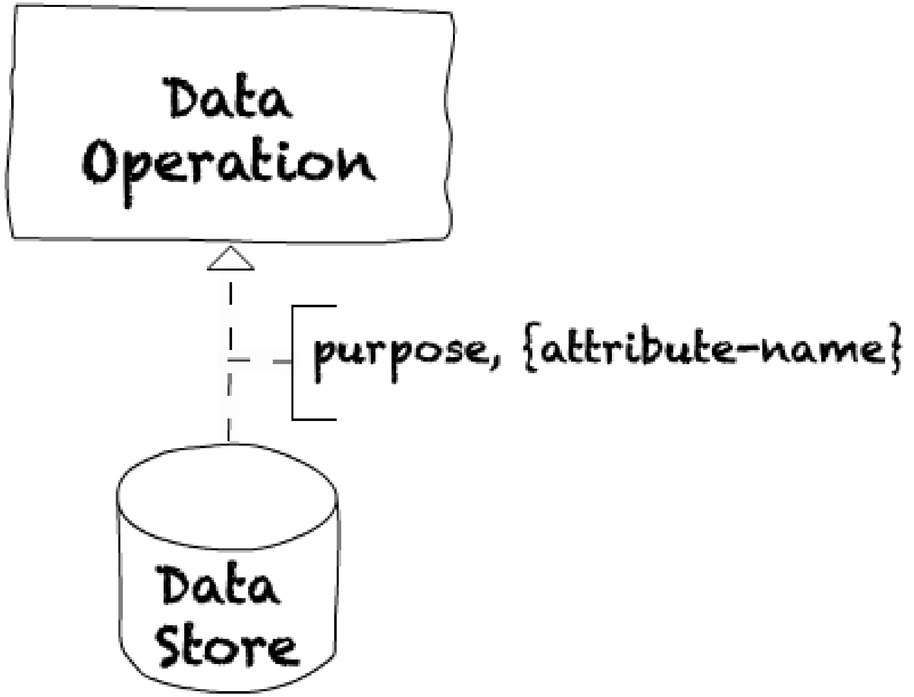

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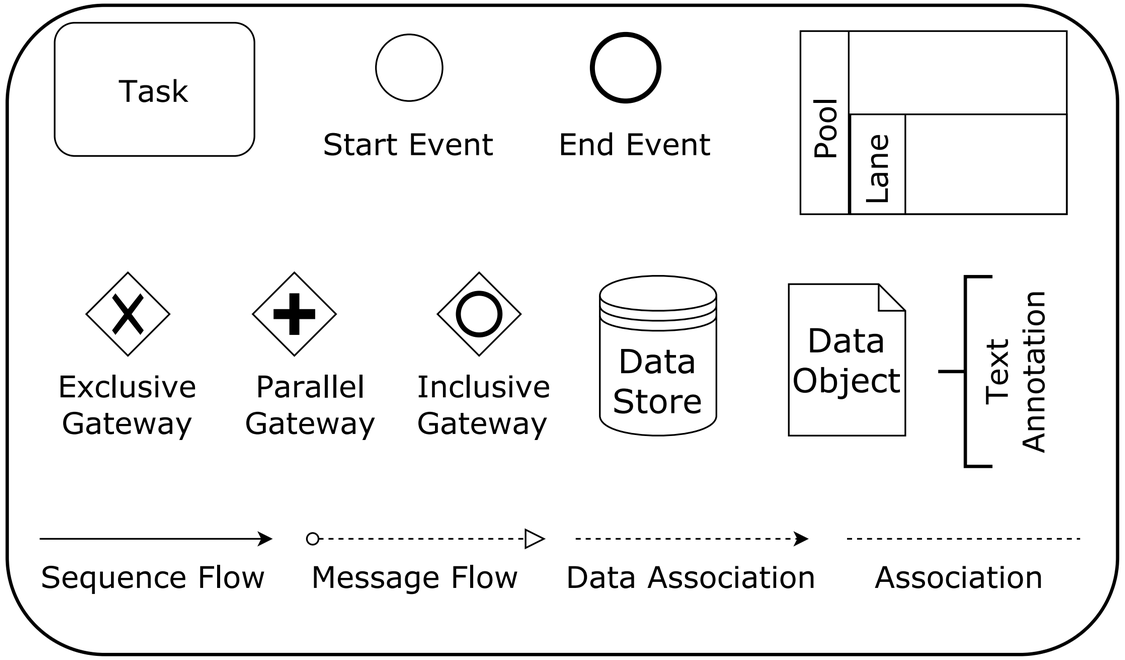

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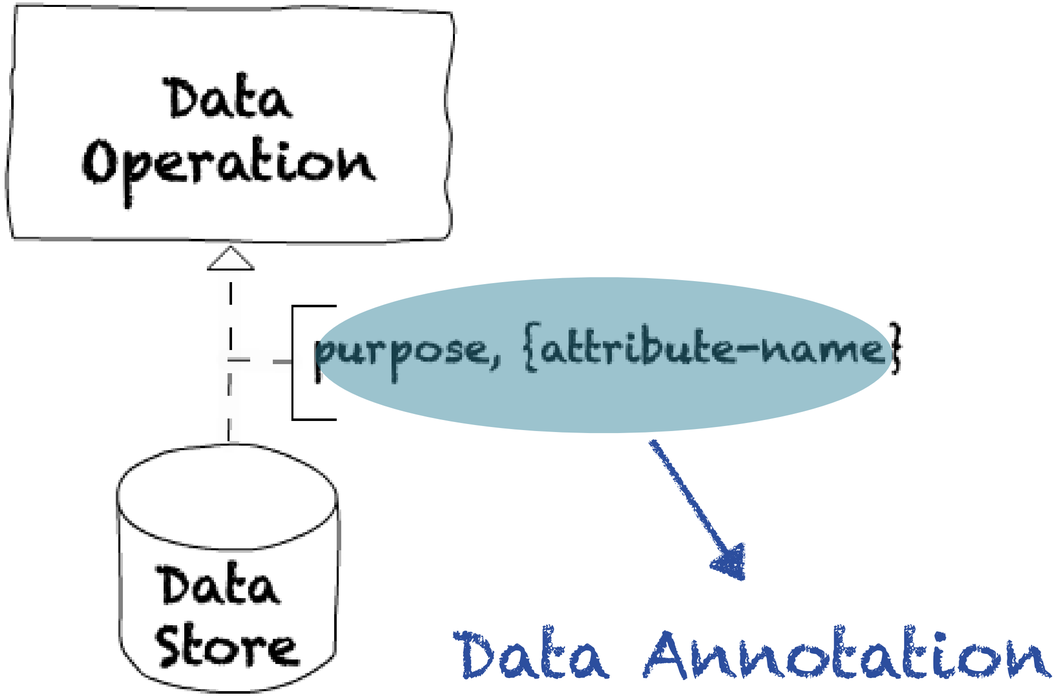

Data Annotation

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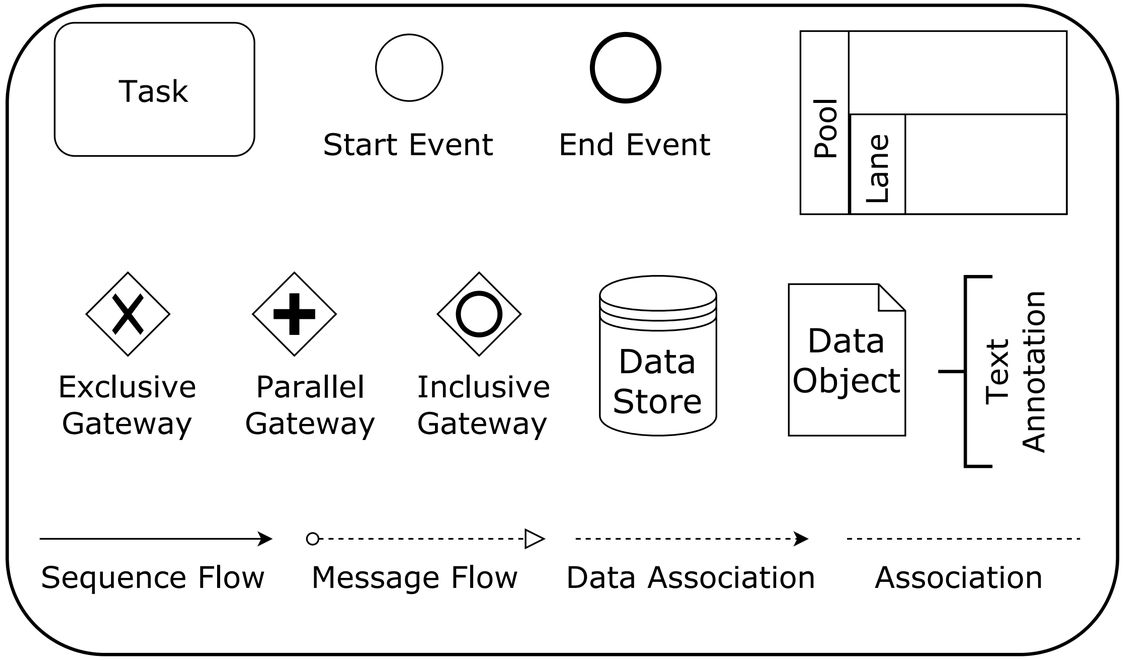

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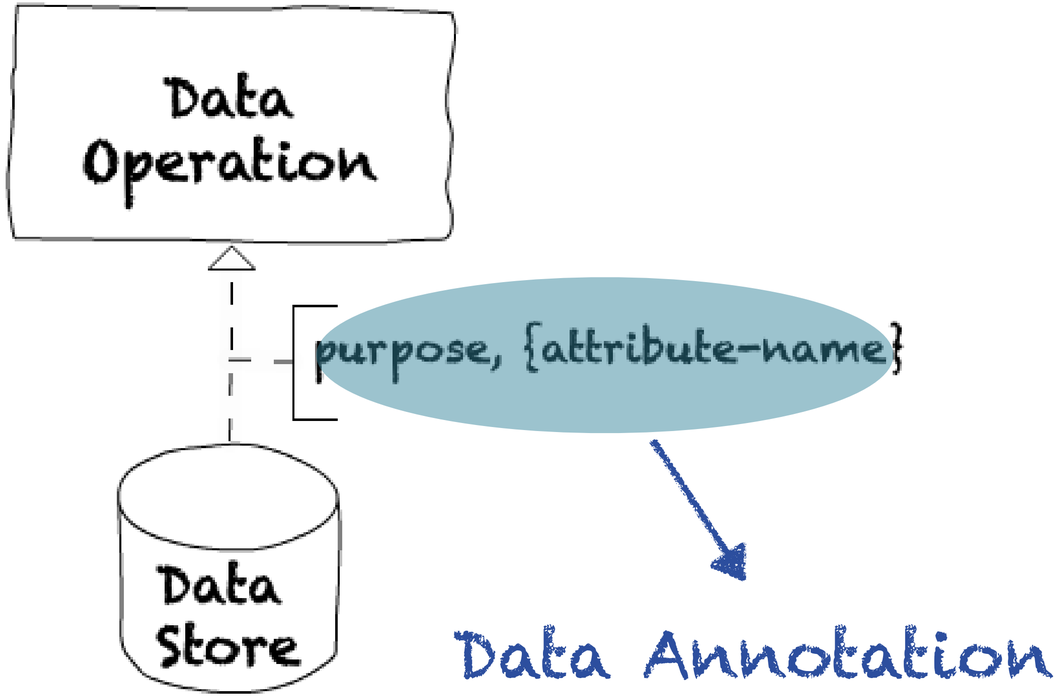

** Different types of Data Handling in BPMN are stated in [1]*

[1] Besik, Saliha Irem, and Johann-Christoph Freytag. "Ontology-Based Privacy Compliance Checking for Clinical Workflows."

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When multiple purposes, consent should be given for all! → Separate / Aggregated Consent Forms

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  - **Consent Pattern**
  - **Revocation Pattern**
  - **Examples**
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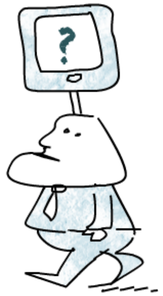
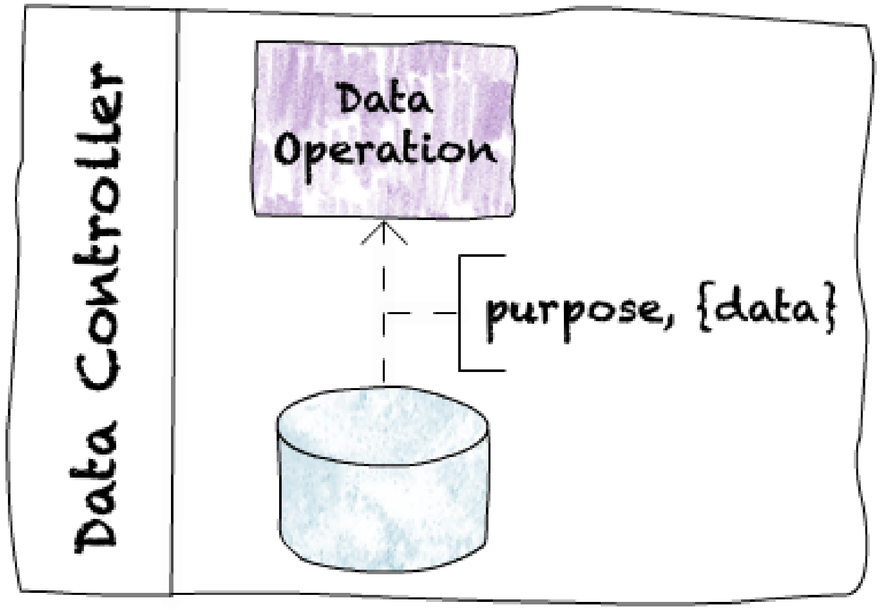
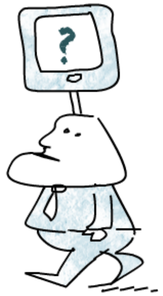


How to handle consent?



Policy: purpose requires consent 



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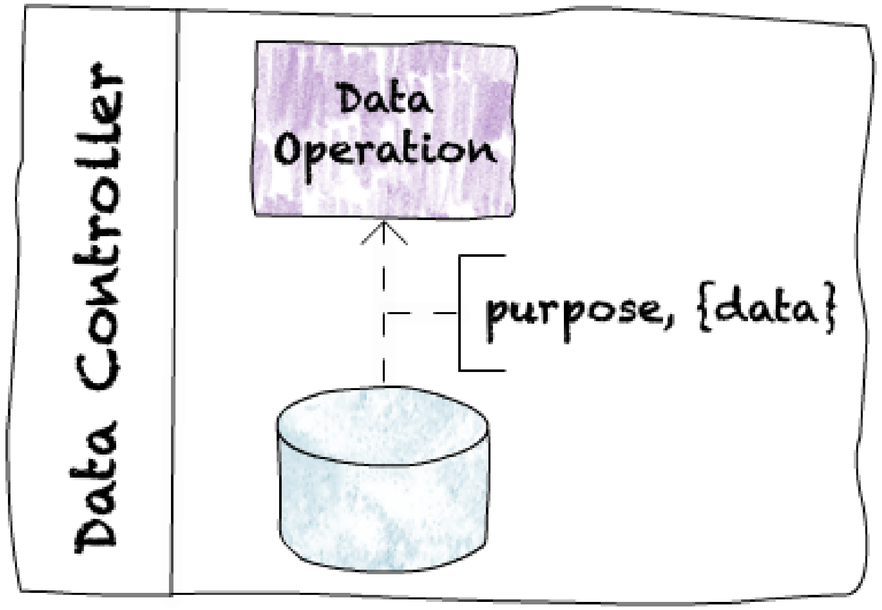

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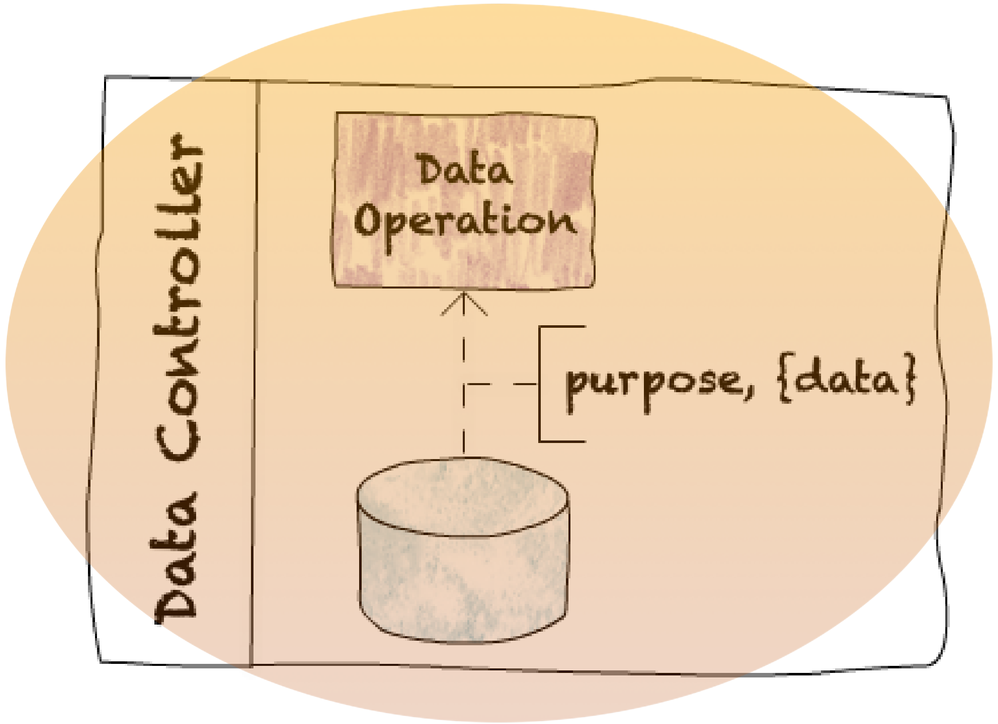

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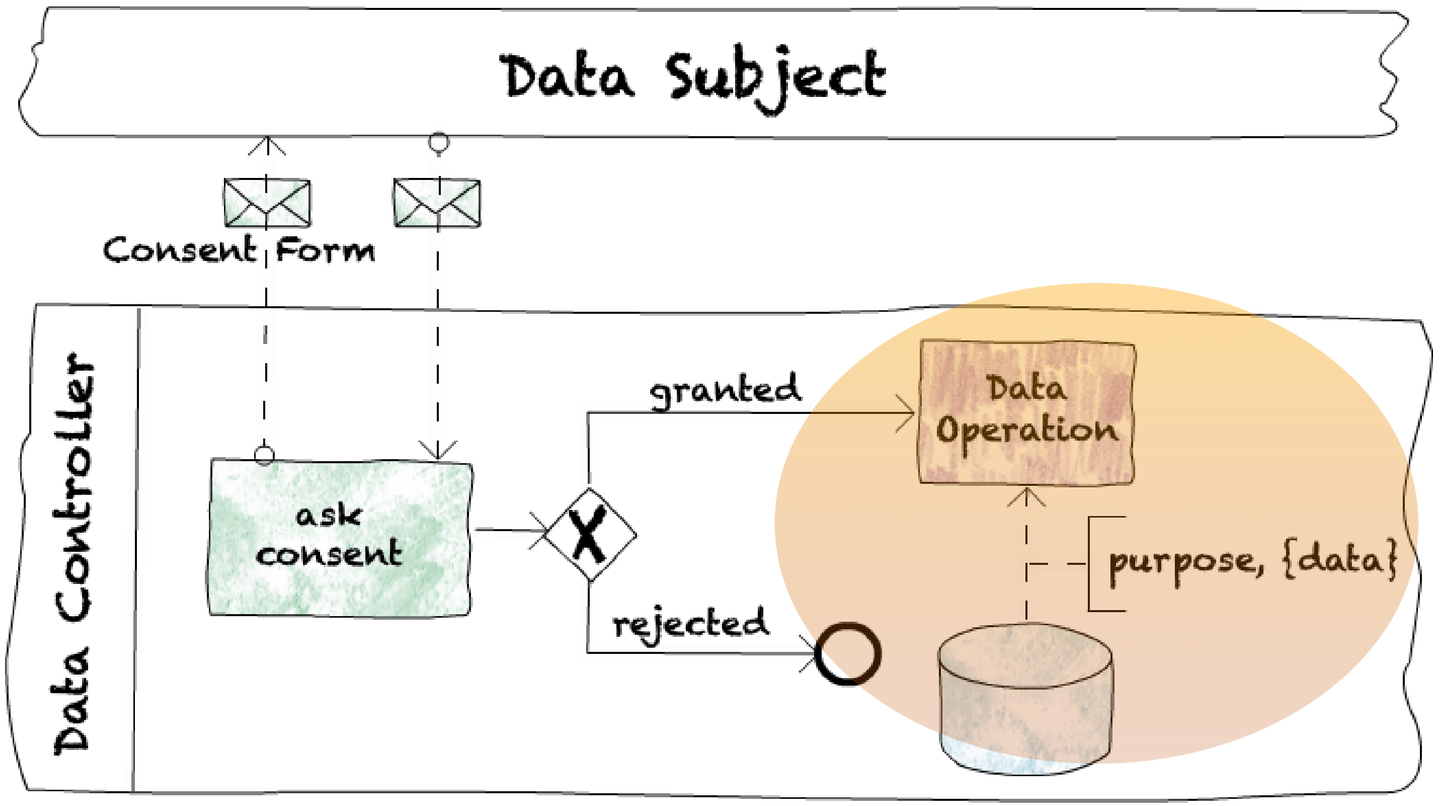

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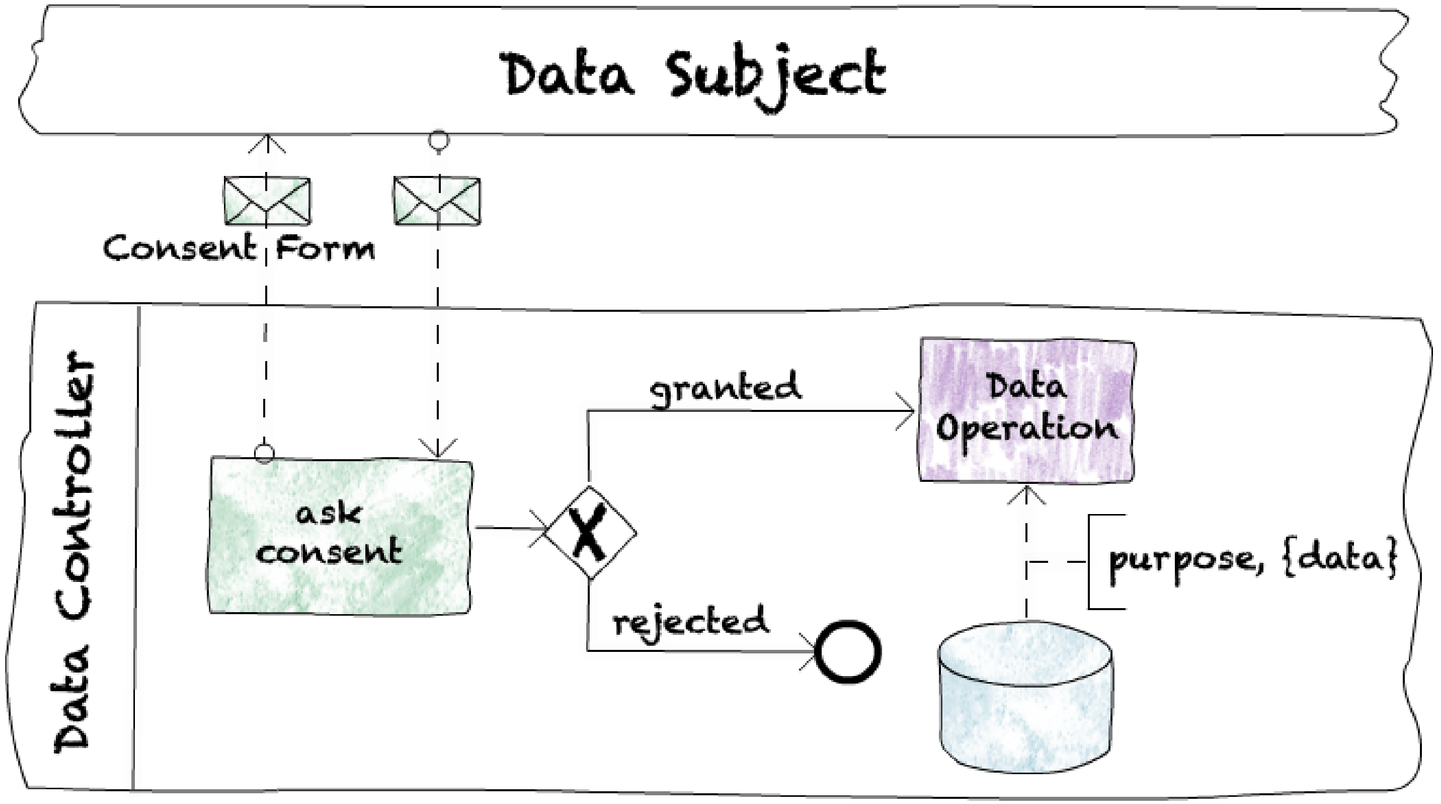

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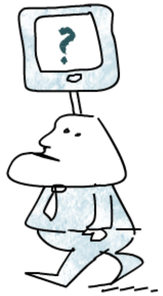

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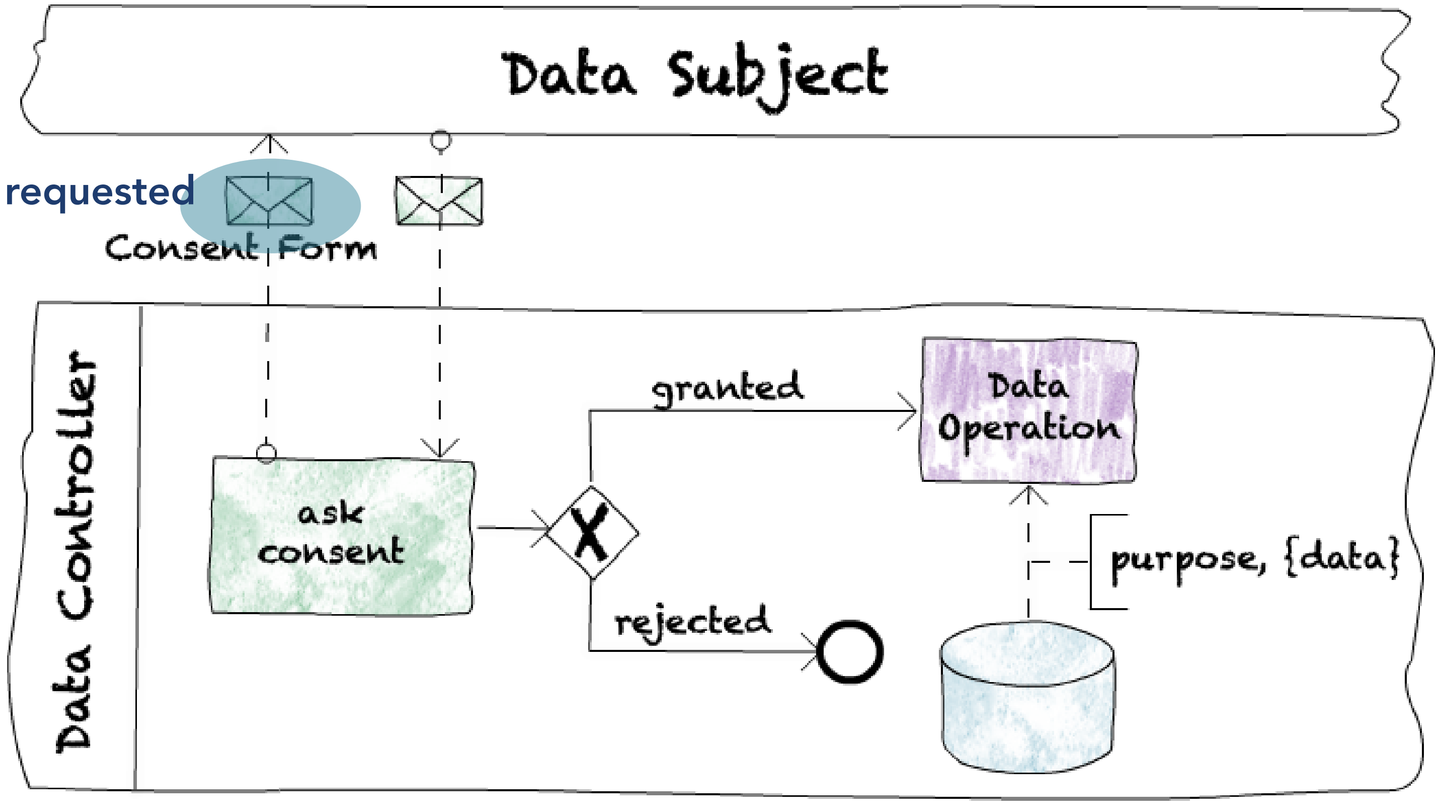

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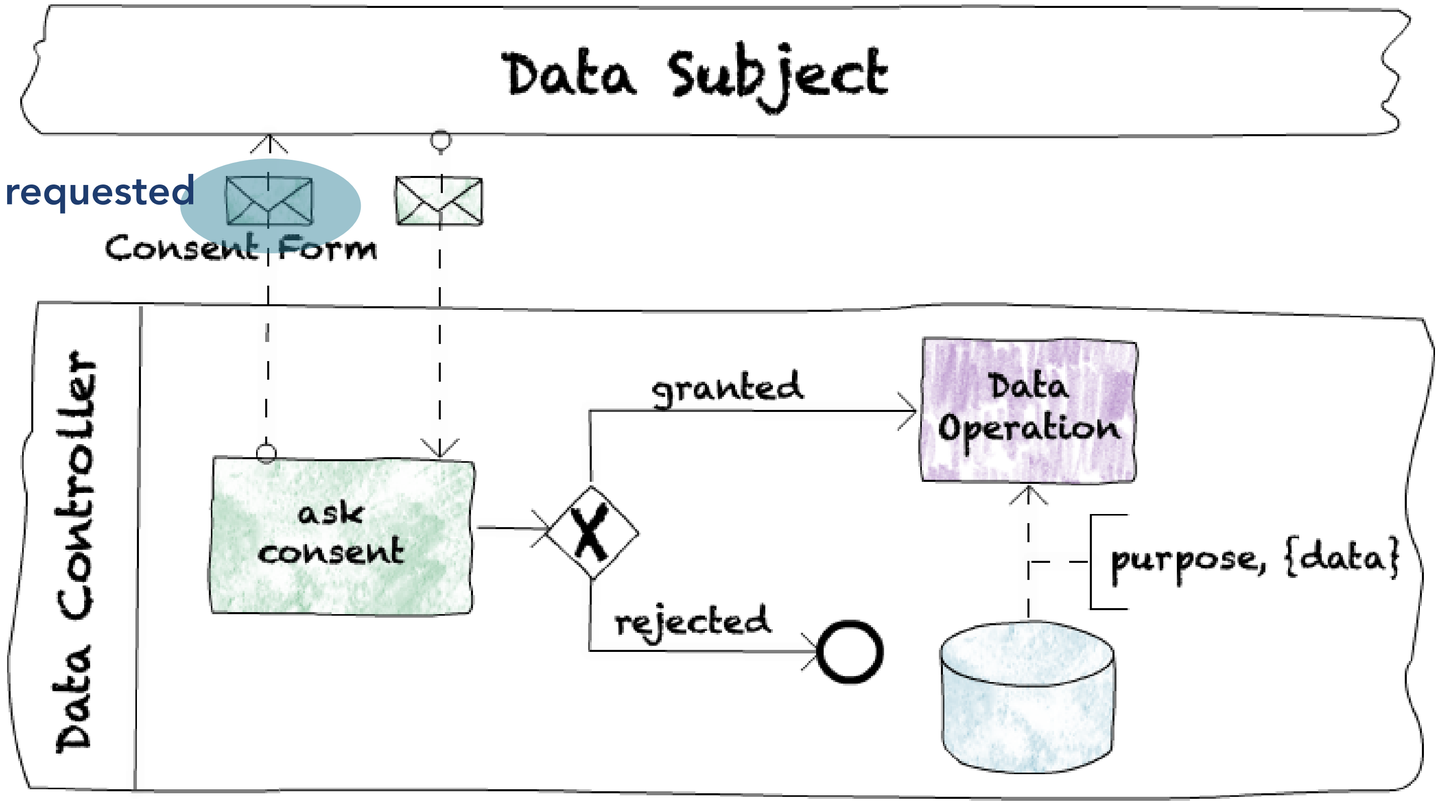

Consent Form

Data Controller

Purpose

Data Subject

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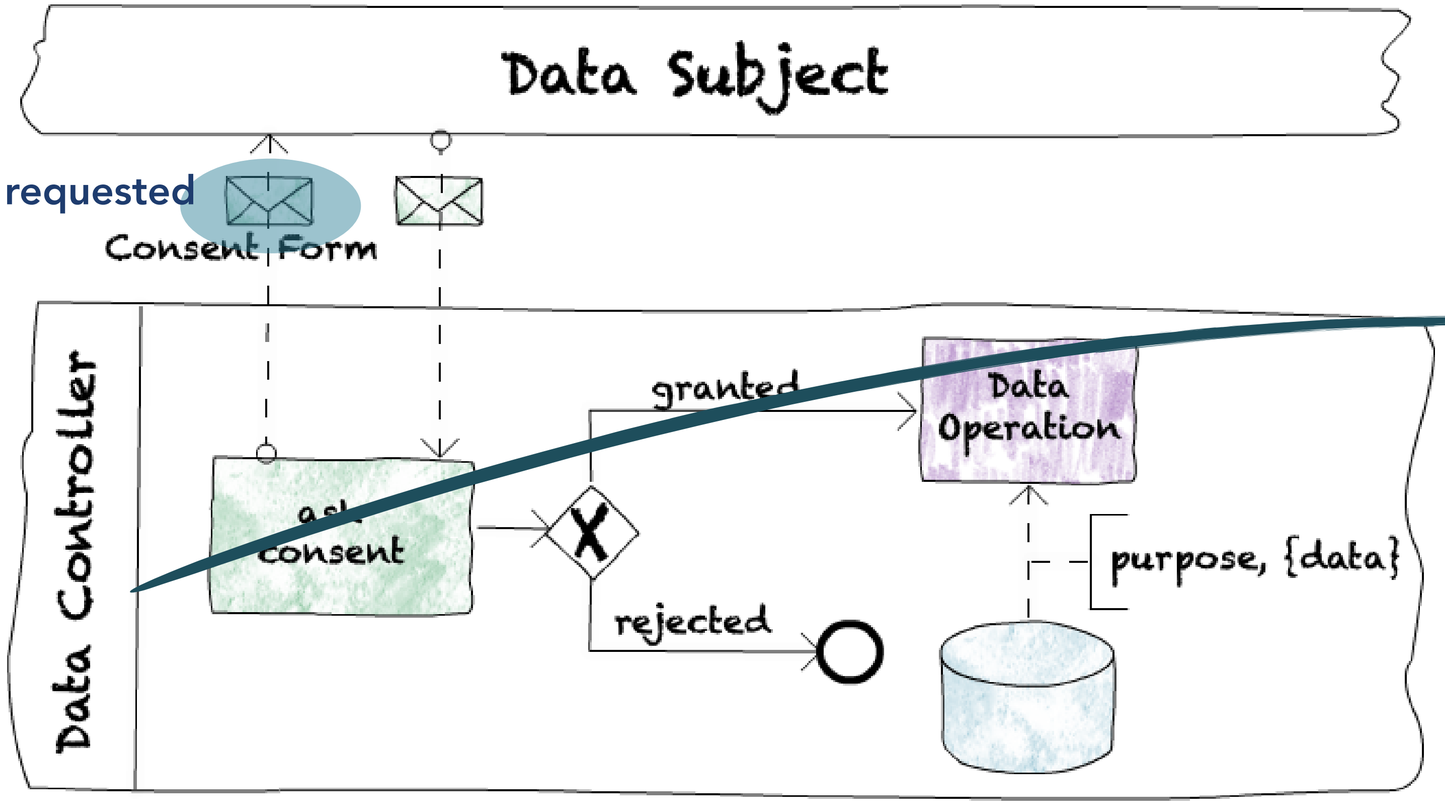

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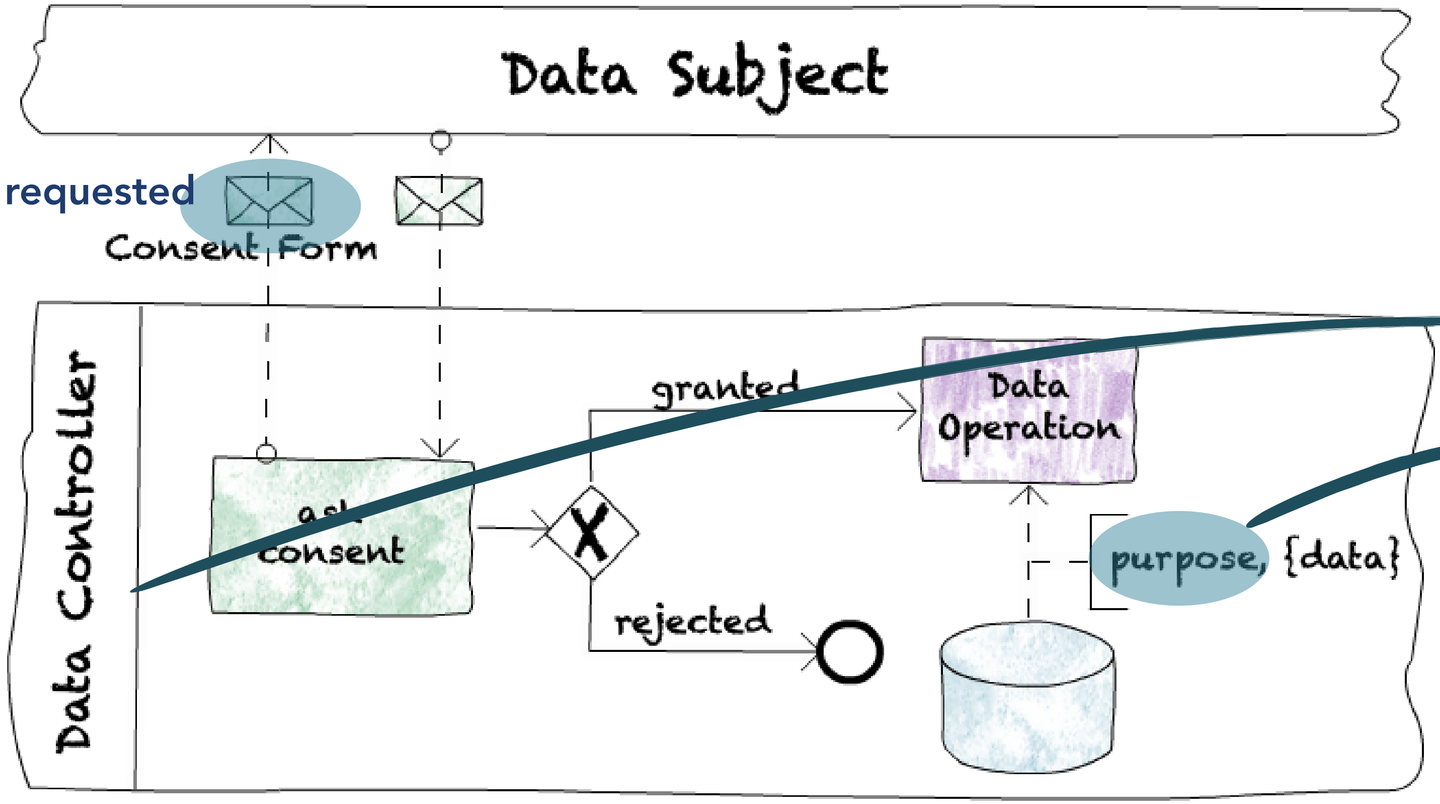

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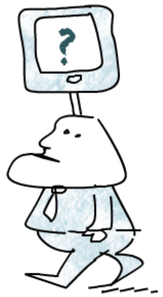
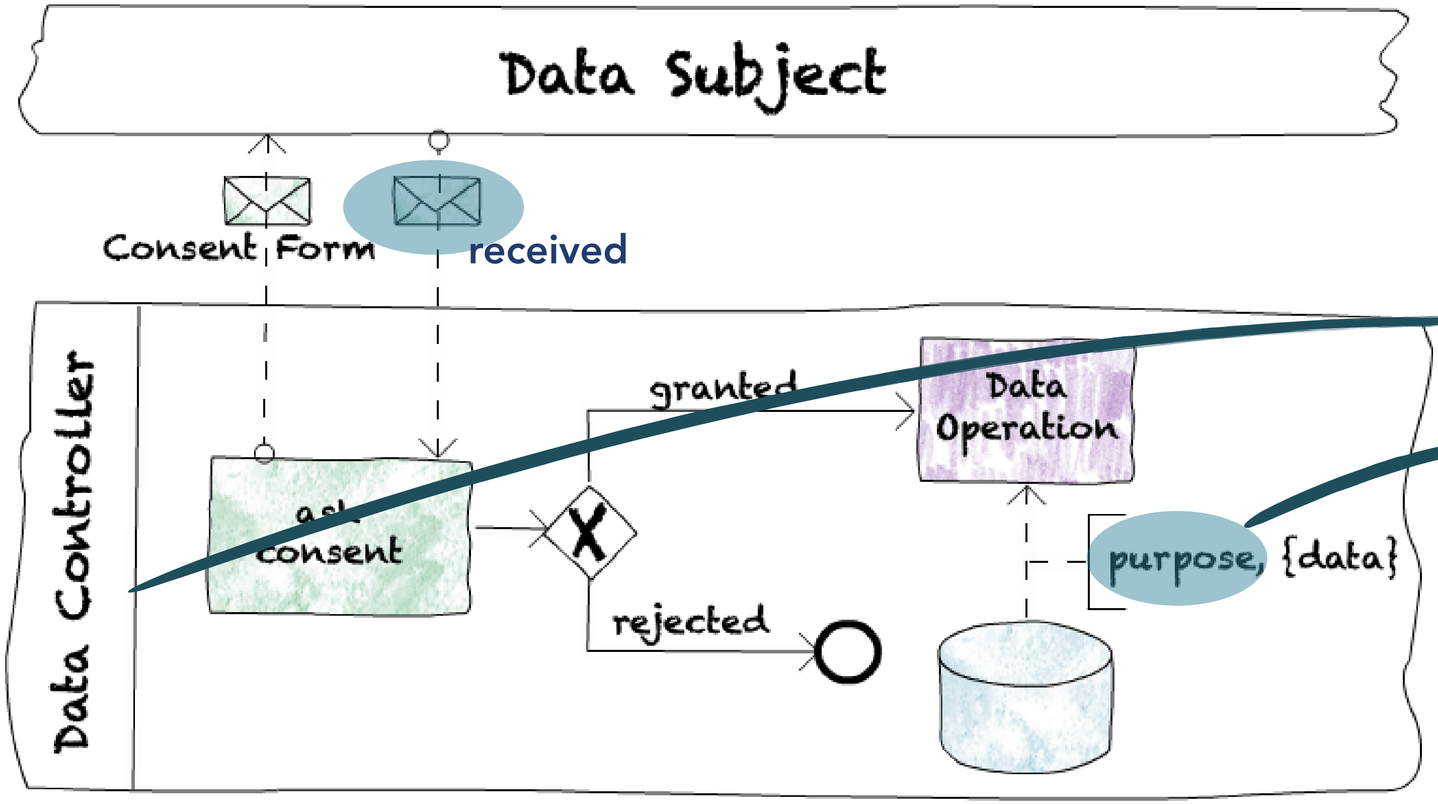


How to handle consent? → Consent Pattern

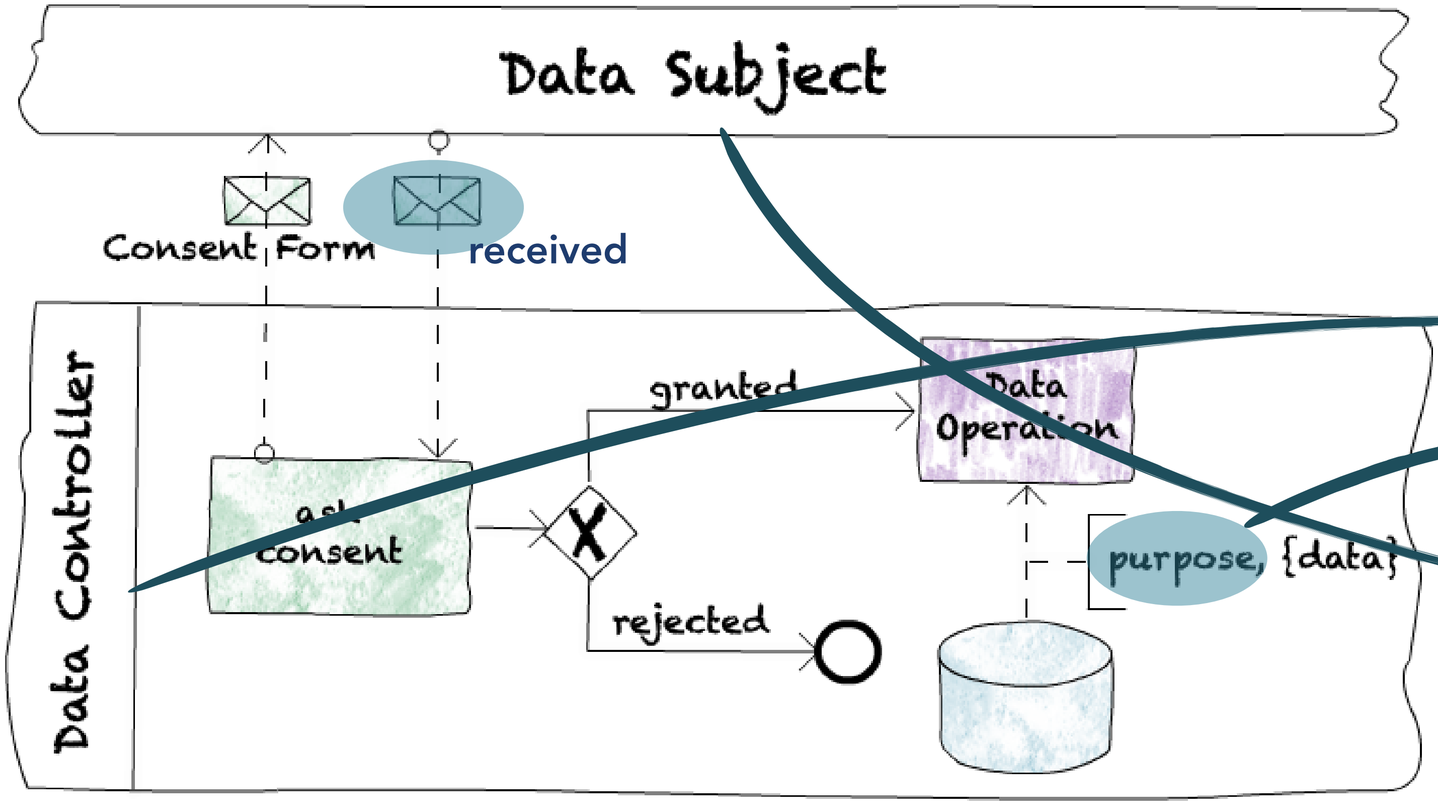


Consent Form

- Data Controller
- Purpose
- Data Subject

Policy: purpose requires consent

How to handle consent? → Consent Pattern



Consent Form

- Data Controller
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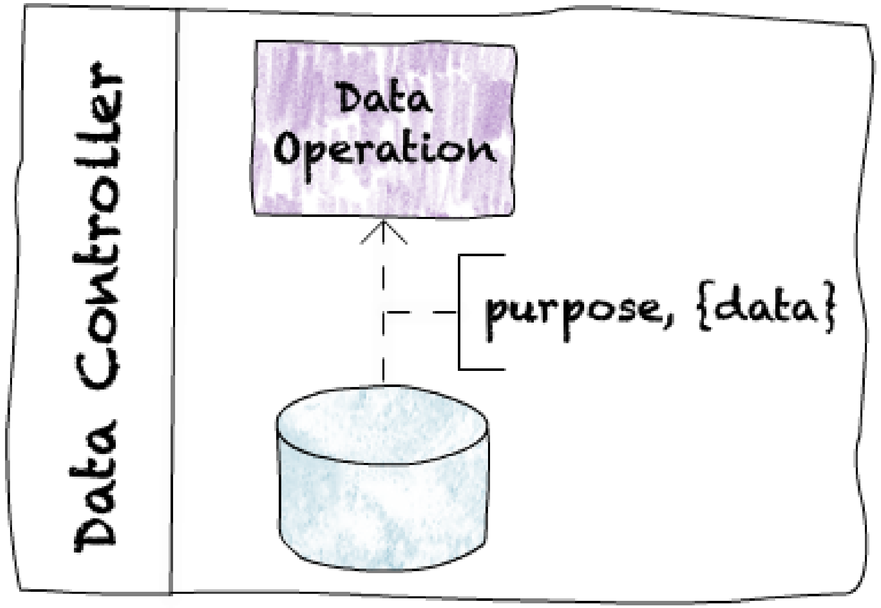
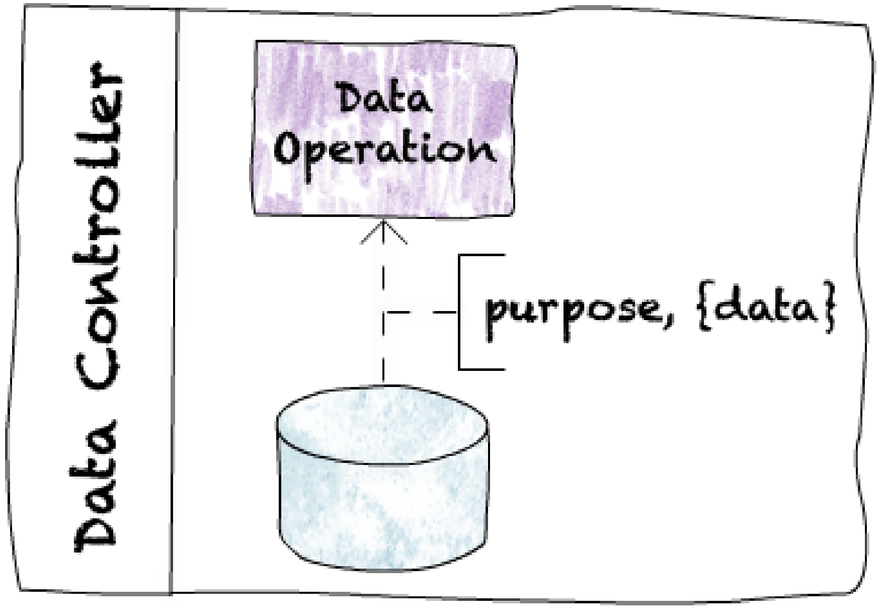
Policy: purpose requires consent

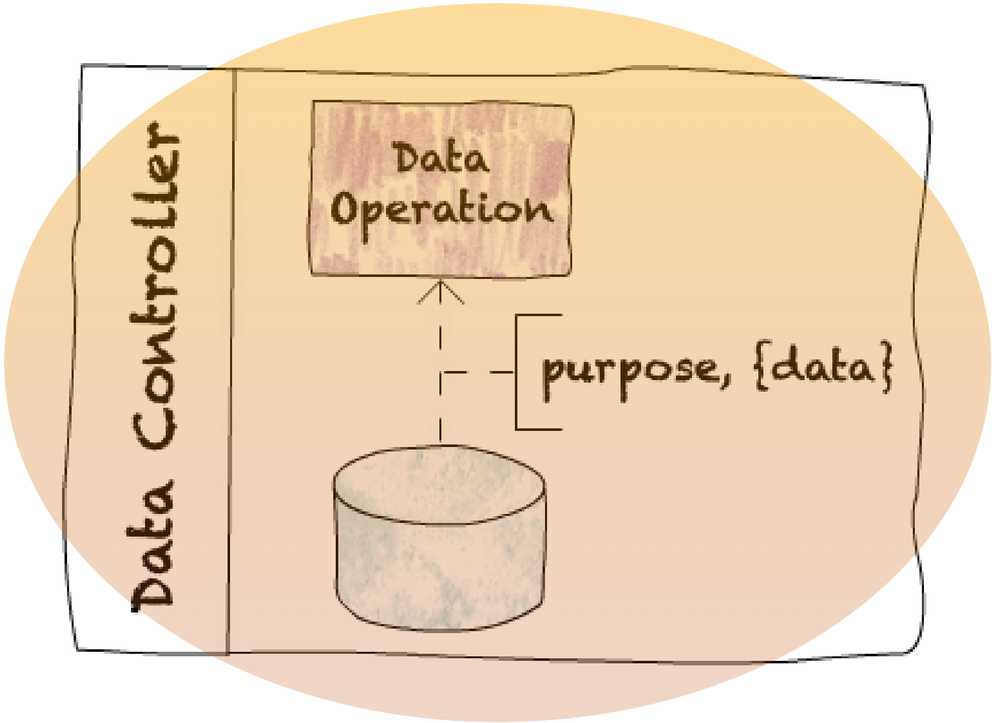
How to handle revocation?



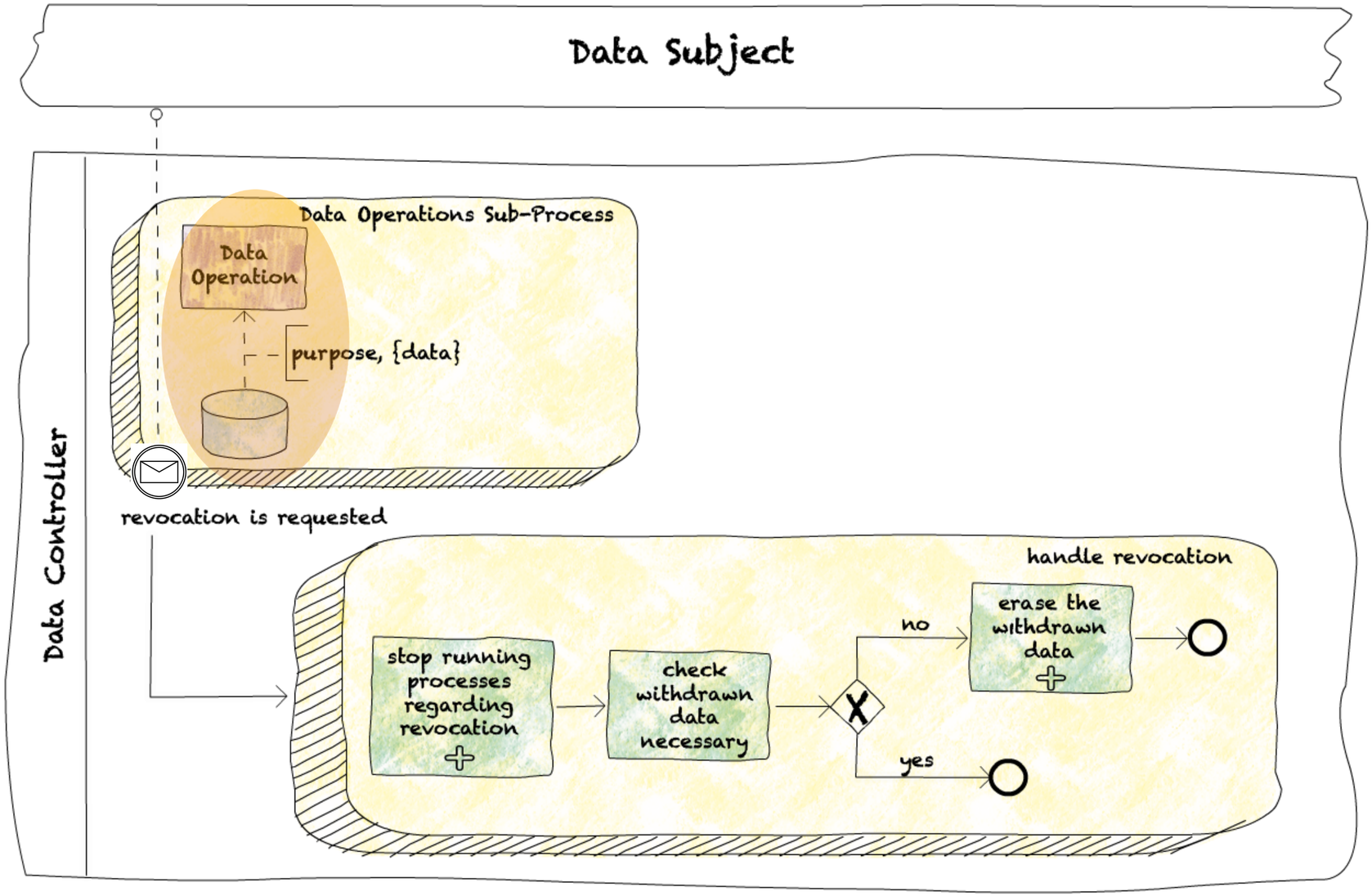
How to handle revocation? → **Revocation Pattern**



How to handle revocation? → **Revocation Pattern**



How to handle revocation? → Revocation Pattern



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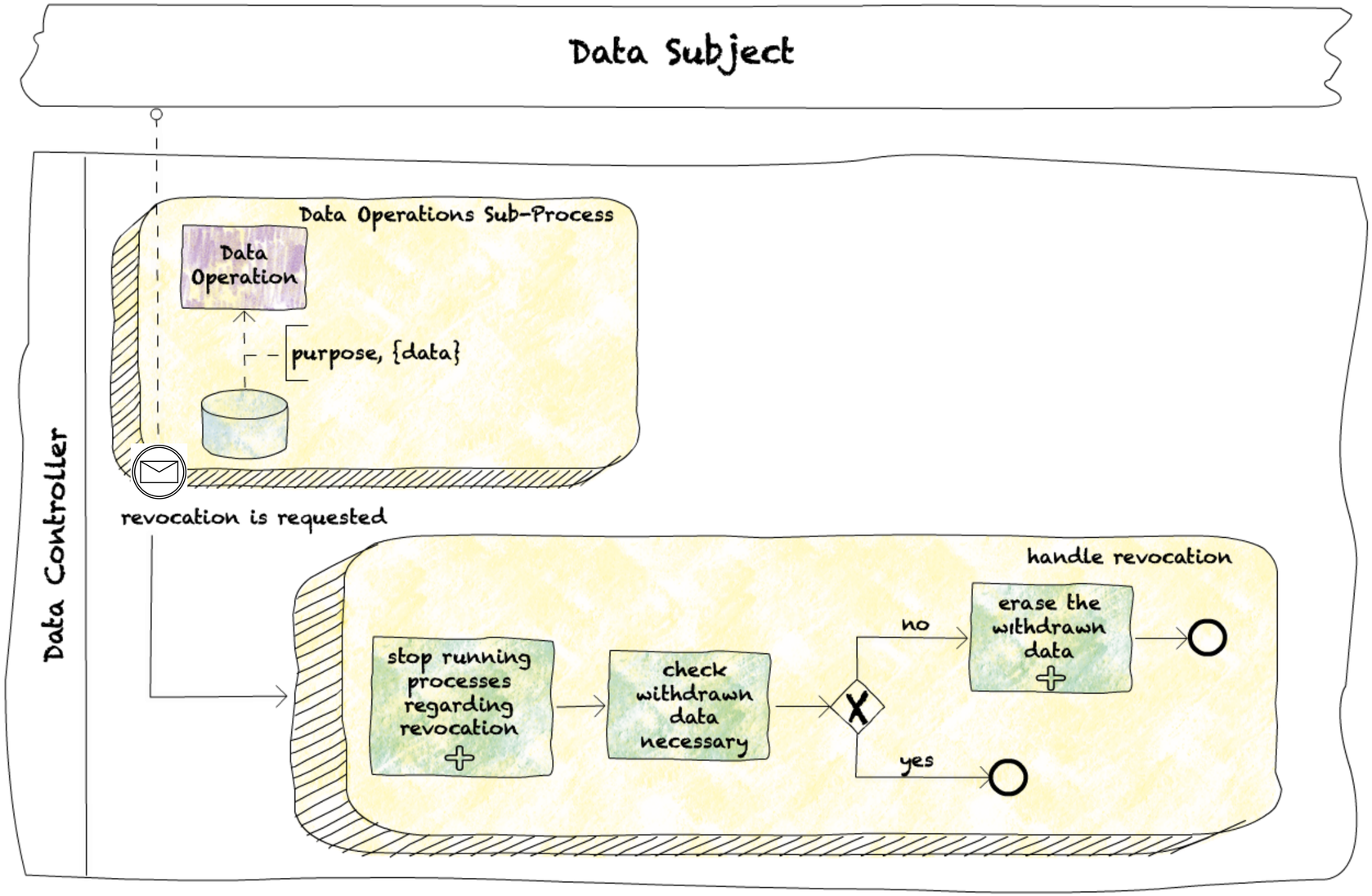
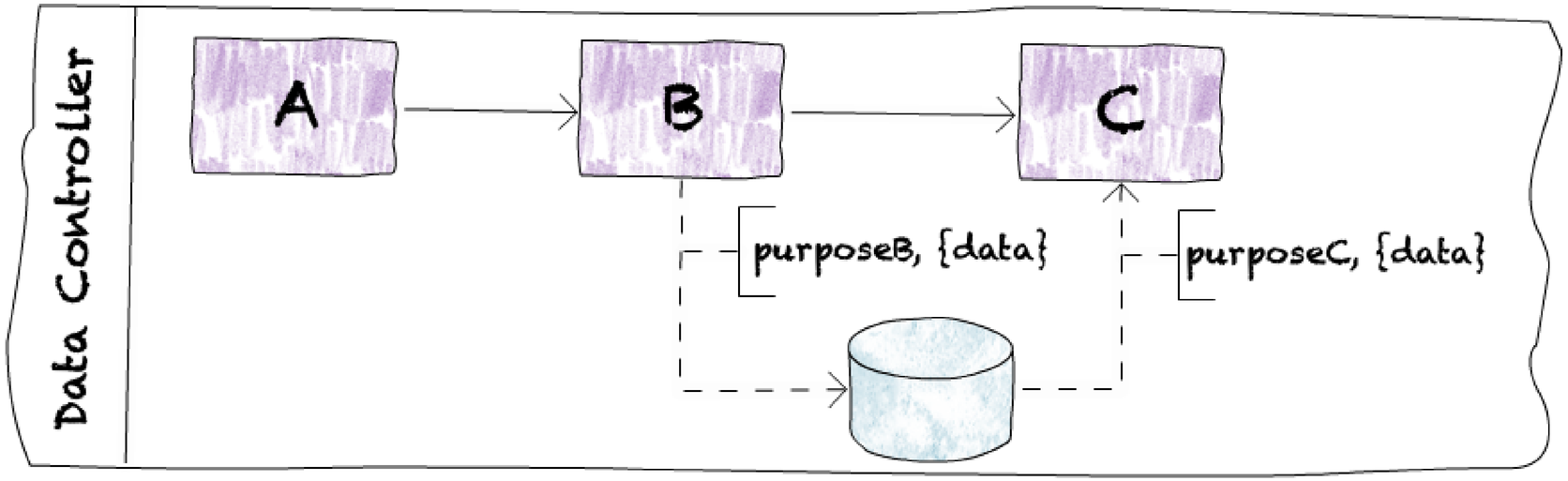


EXAMPLE #1- *AGGREGATED CONSENT*



Policy: purposeB & purposeC require consent

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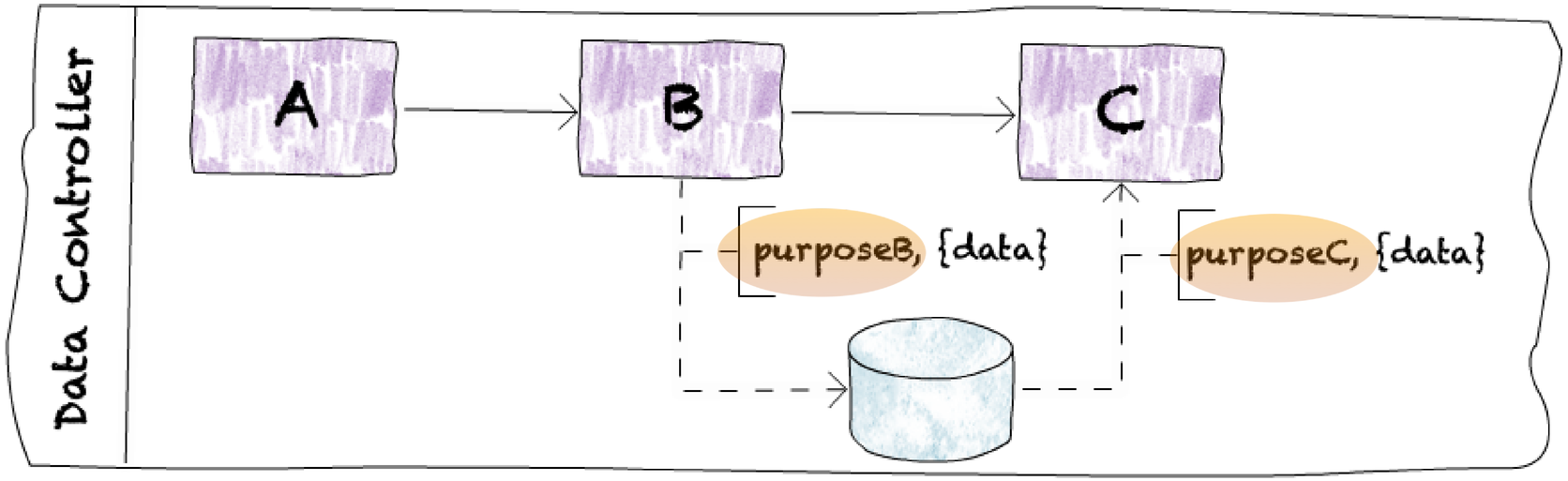

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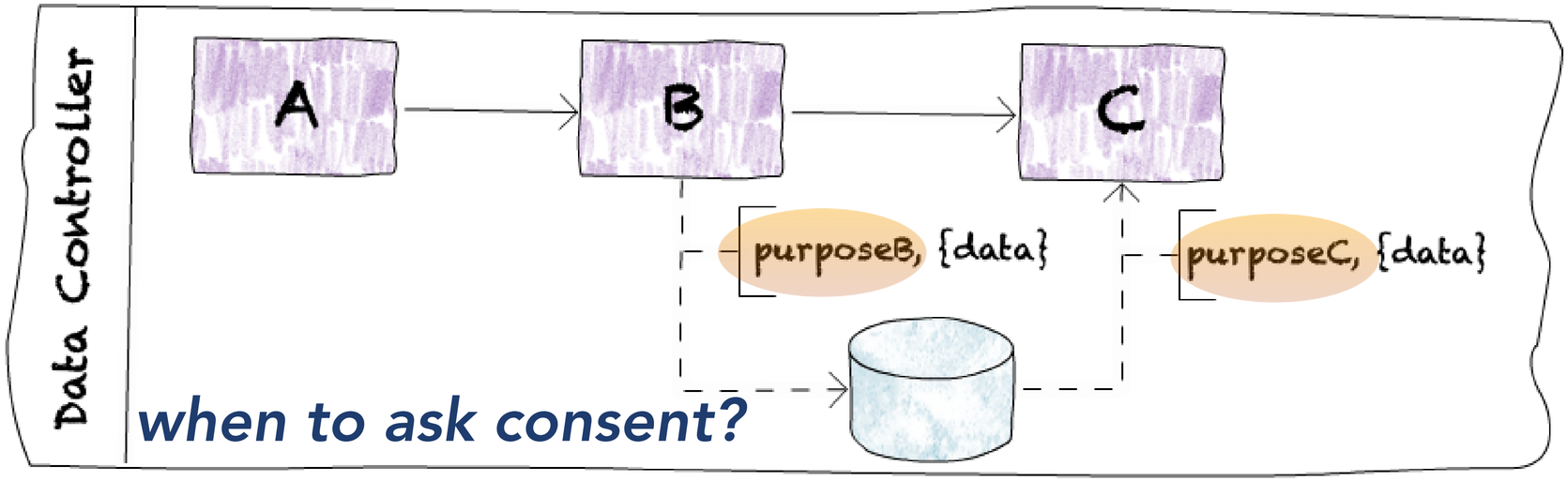

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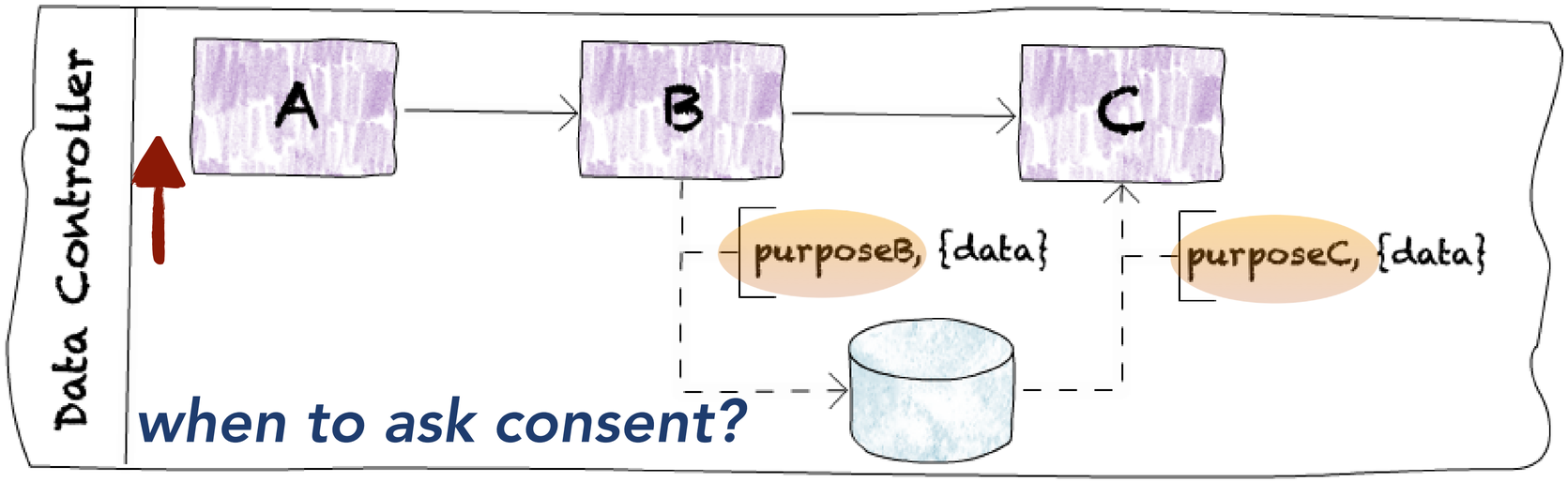

"Potential" Issue: Consent is obtained yet never used

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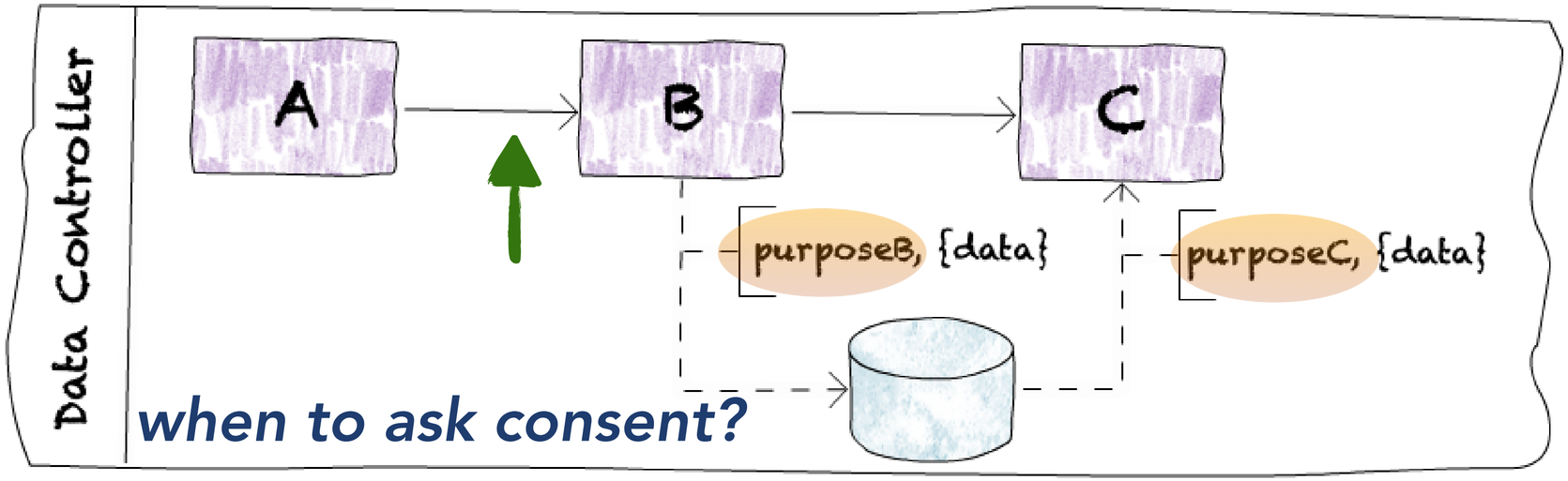

Strategy: ask it just before data operation to minimize this risk

Policy: purposeB & purposeC require consent

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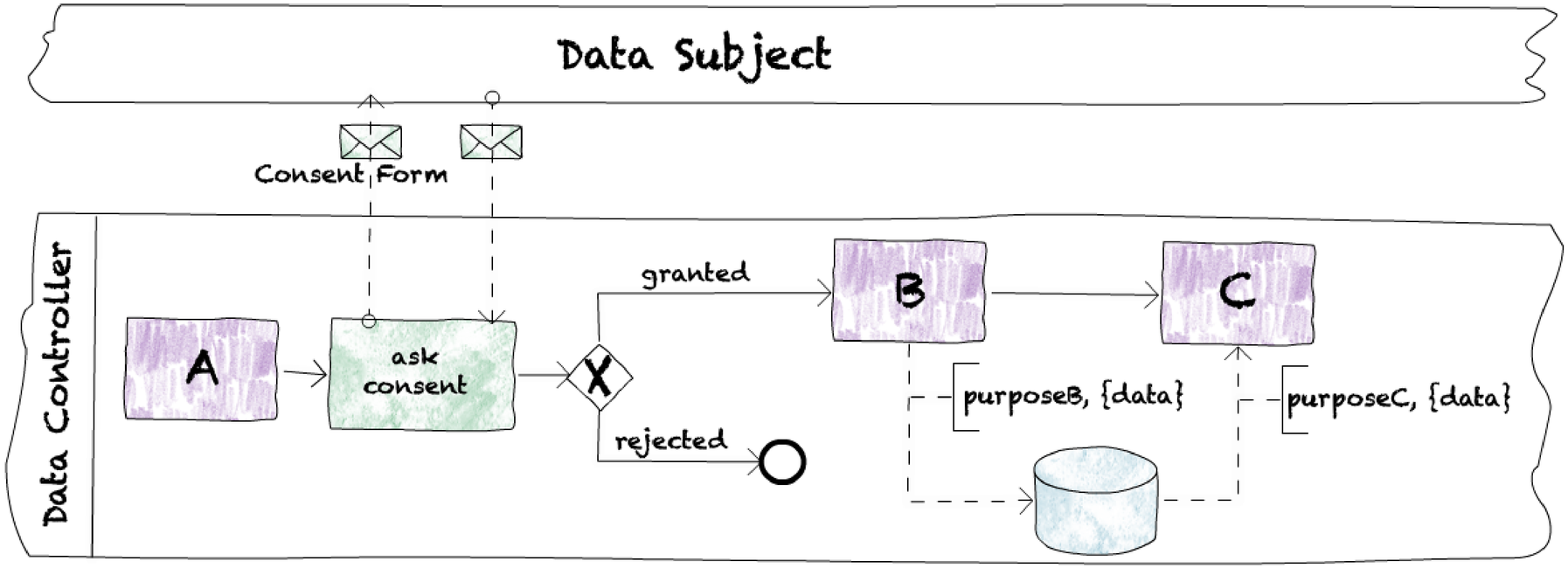

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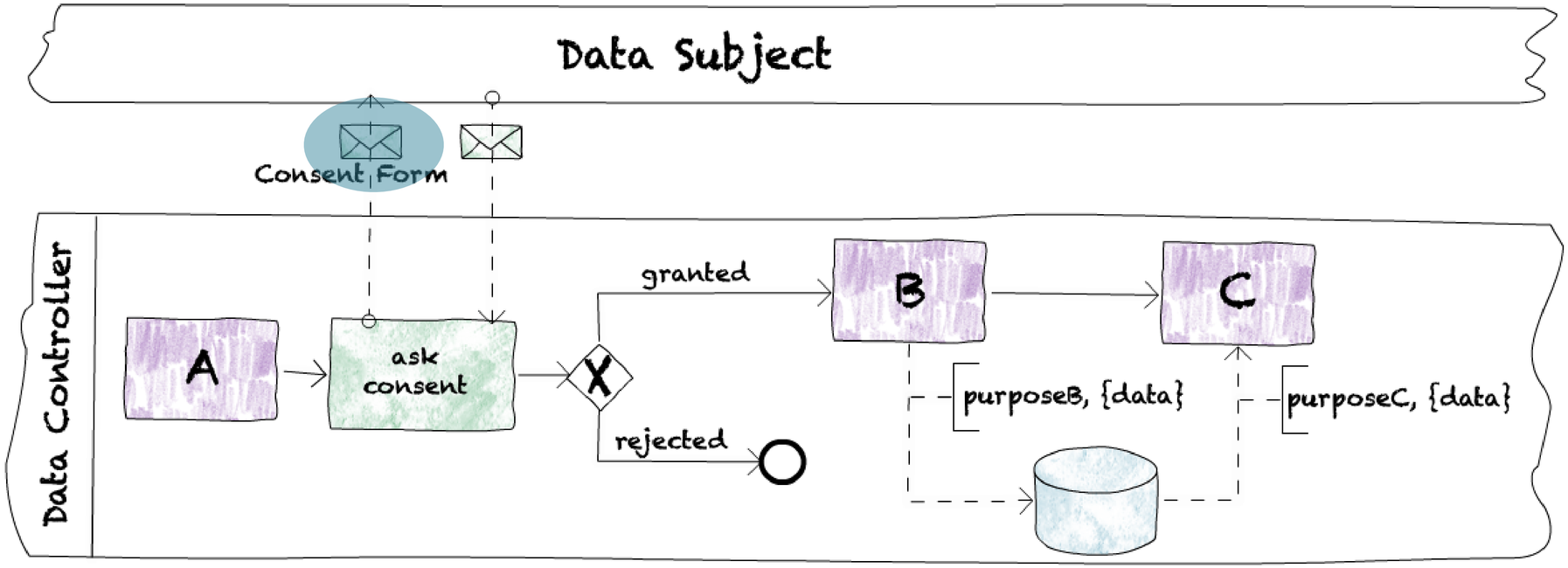

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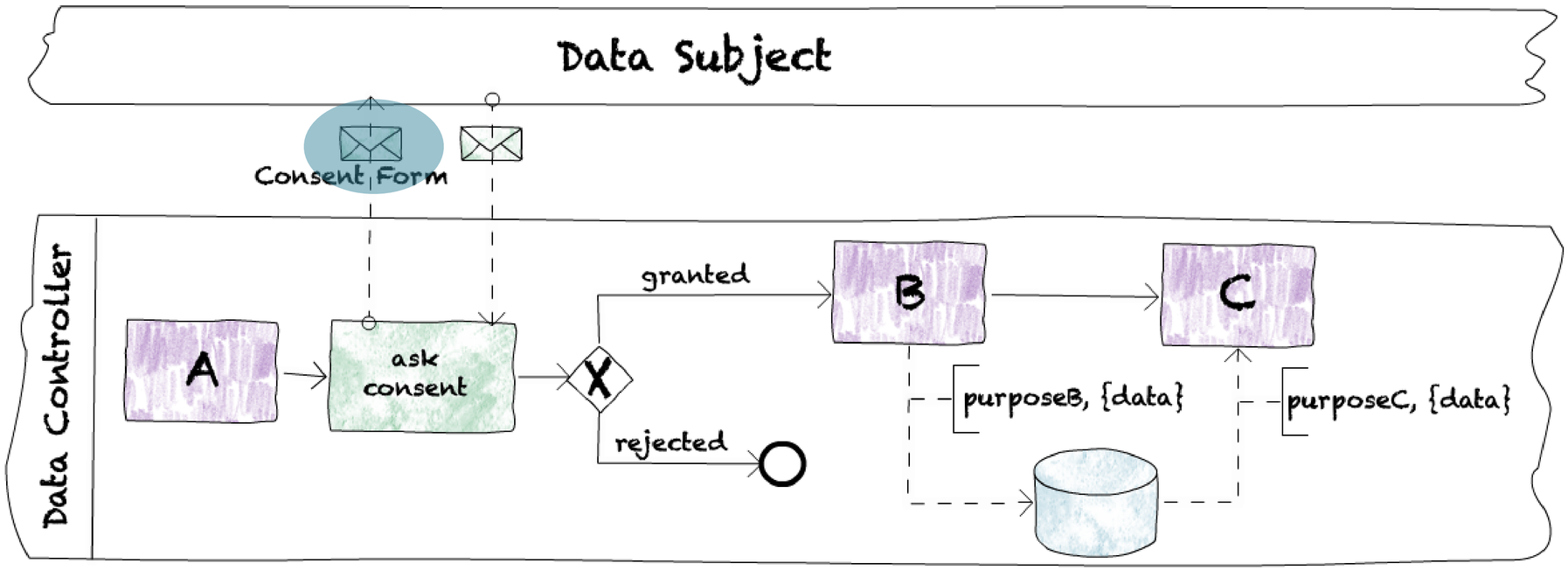

Consent Form

Data Controller

Purpose:

Data Subject

Aggregated Consent Form

Policy: purposeB & purposeC require consent

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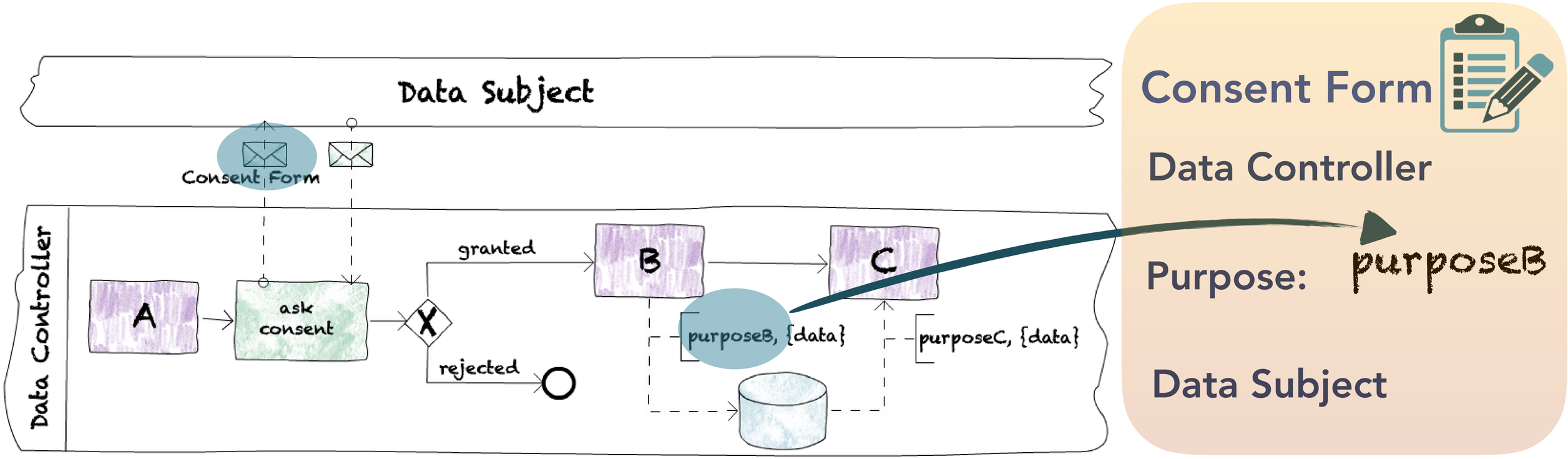

Aggregated Consent Form

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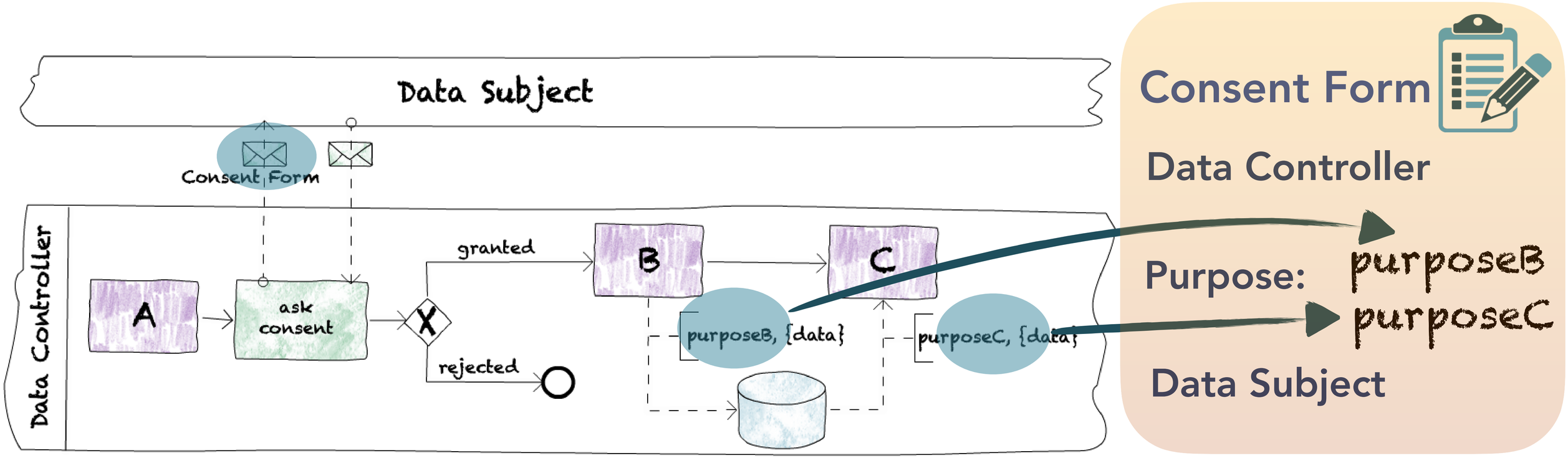
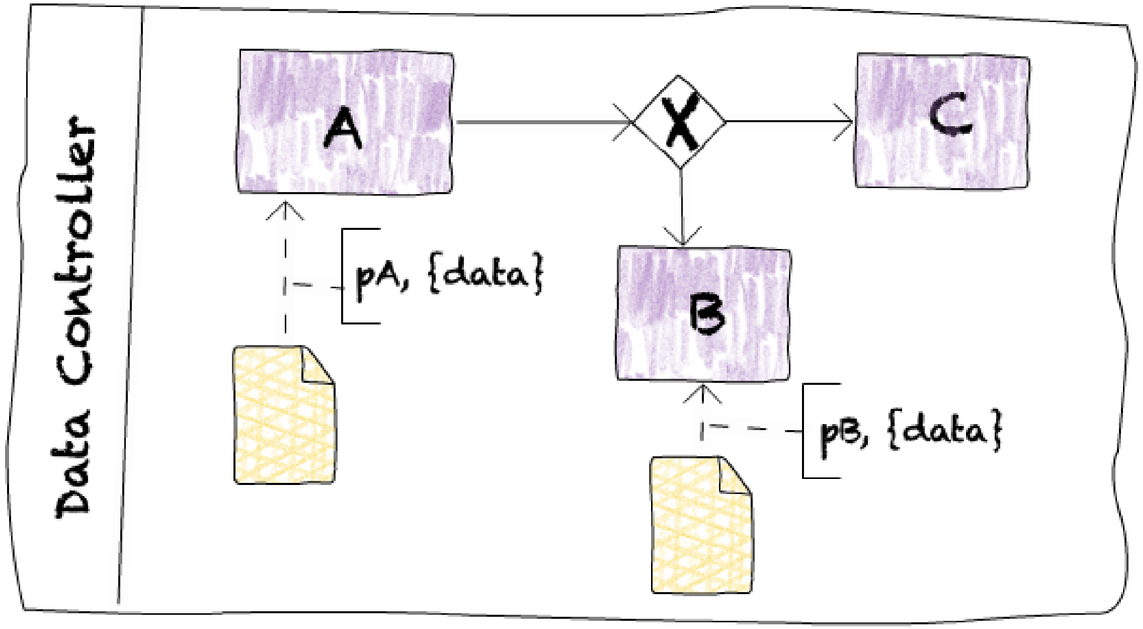


Aggregated Consent Form

Policy: purposeB & purposeC require consent

EXAMPLE #2 - *SEPARATE CONSENT*



Policy: pA & pB require consent

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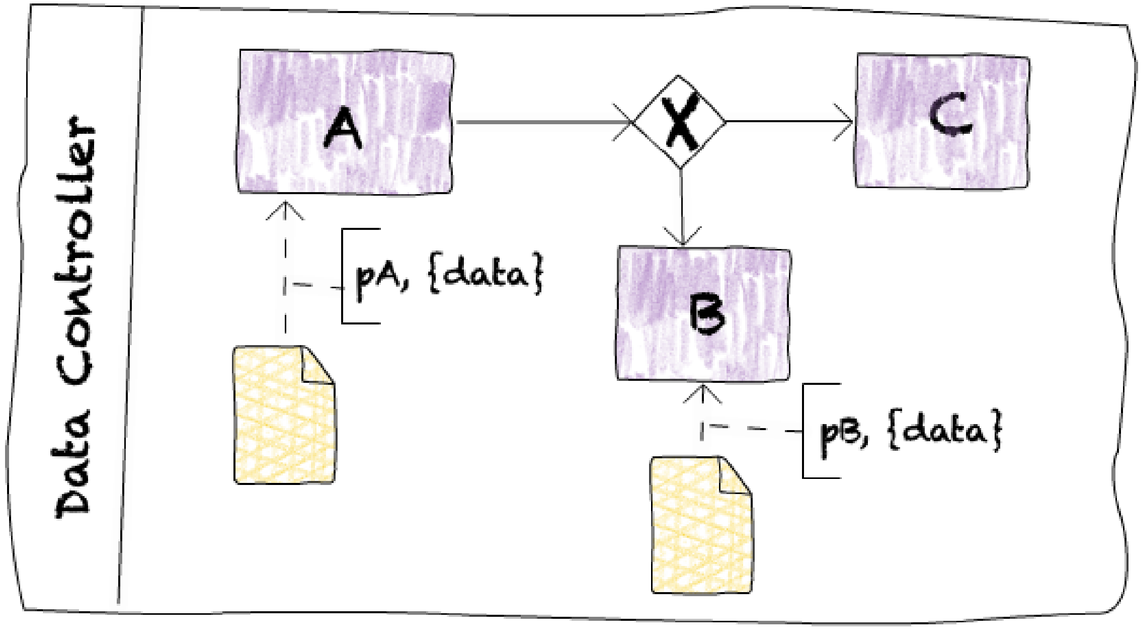

Aggregated vs Separate Consent Form?

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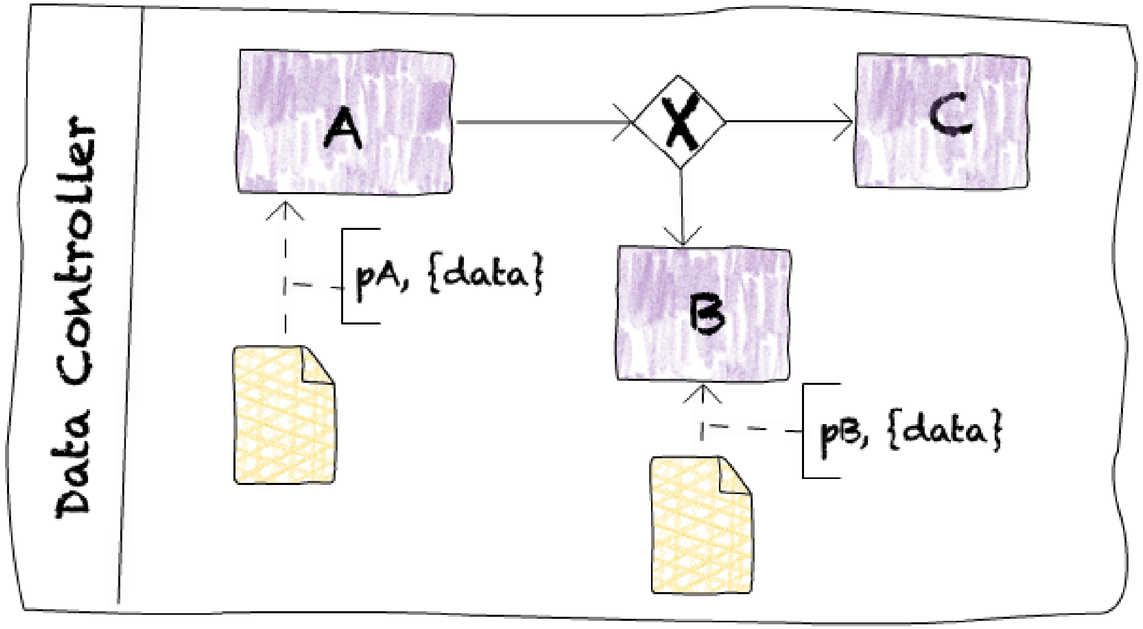

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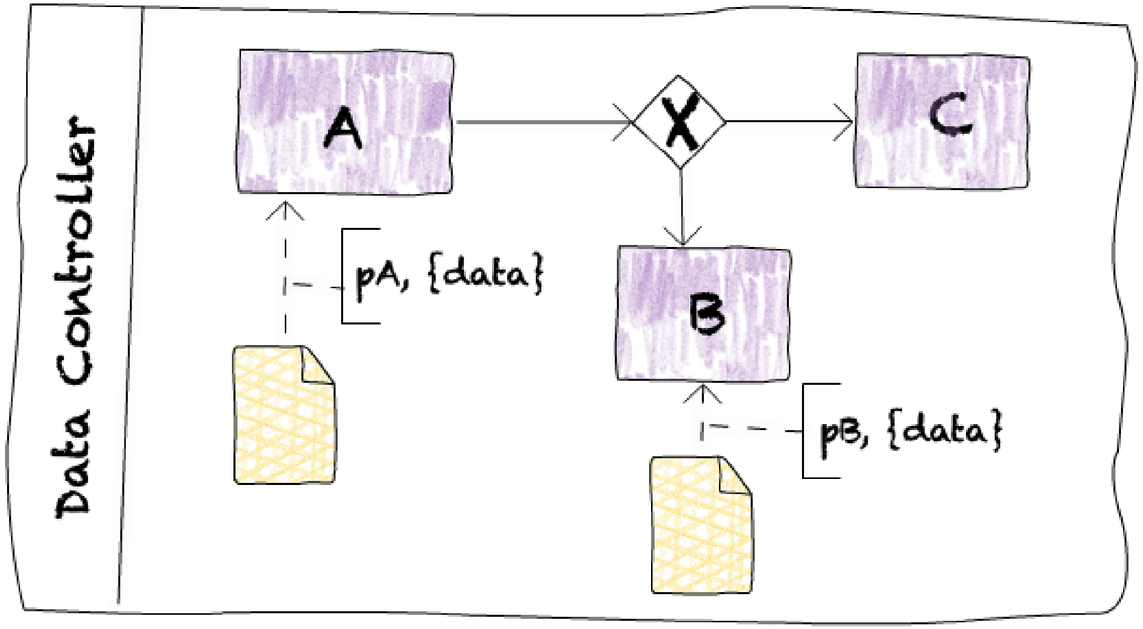

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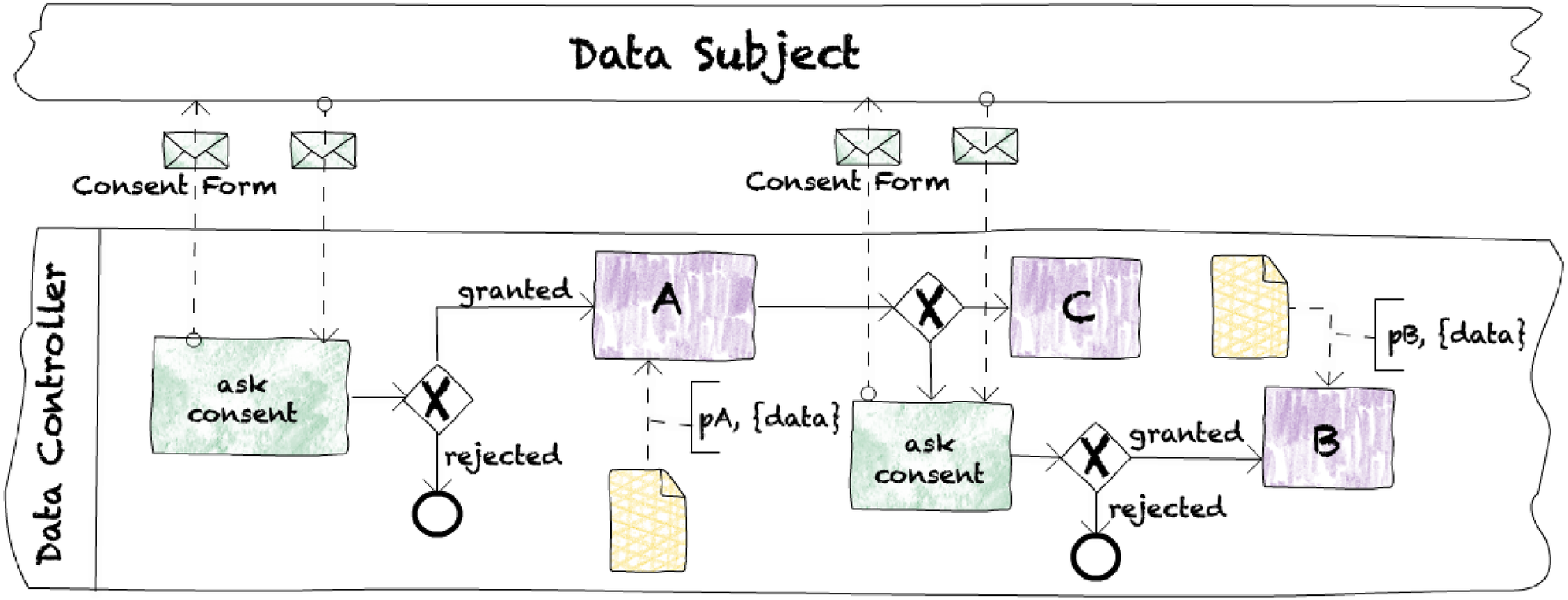

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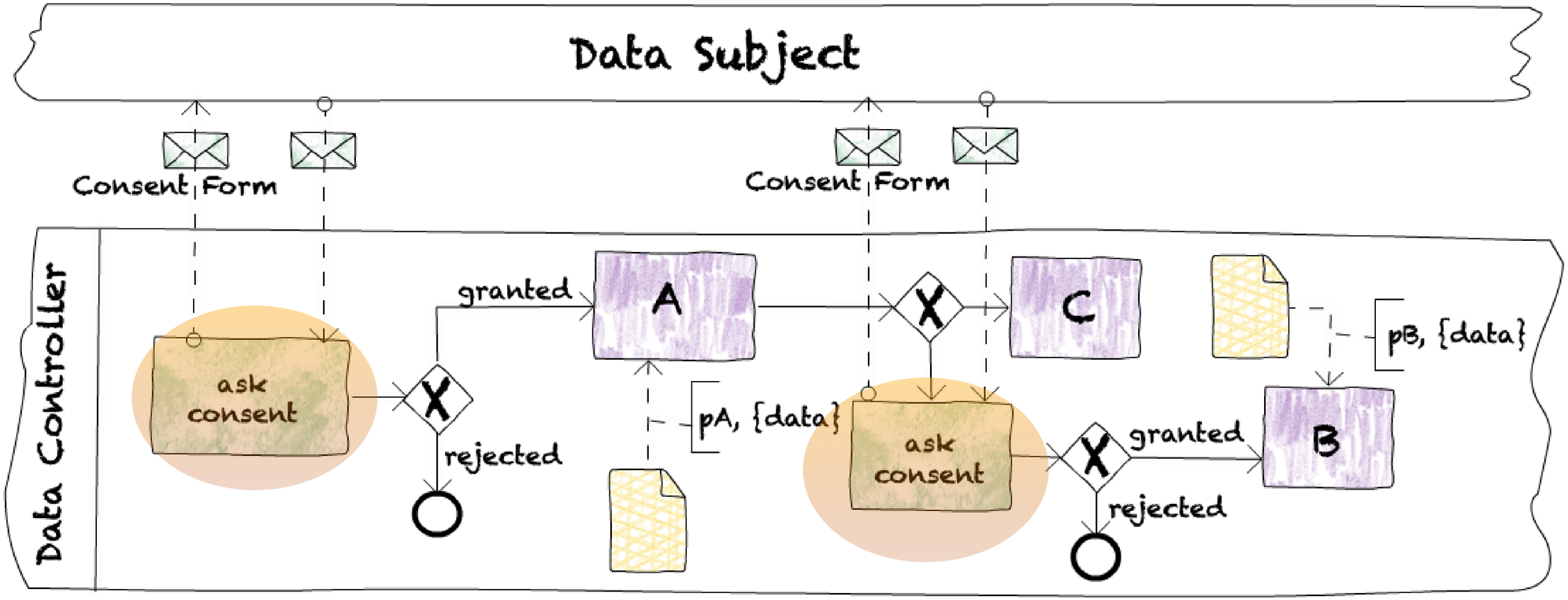

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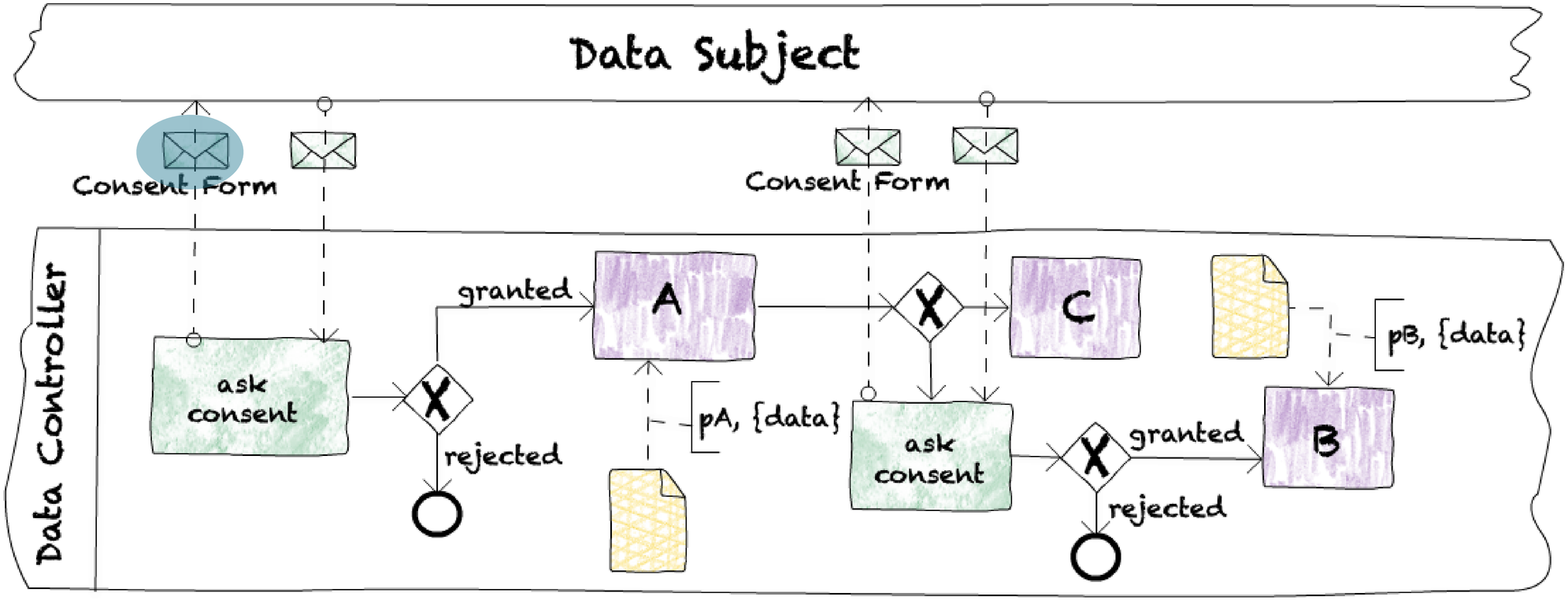

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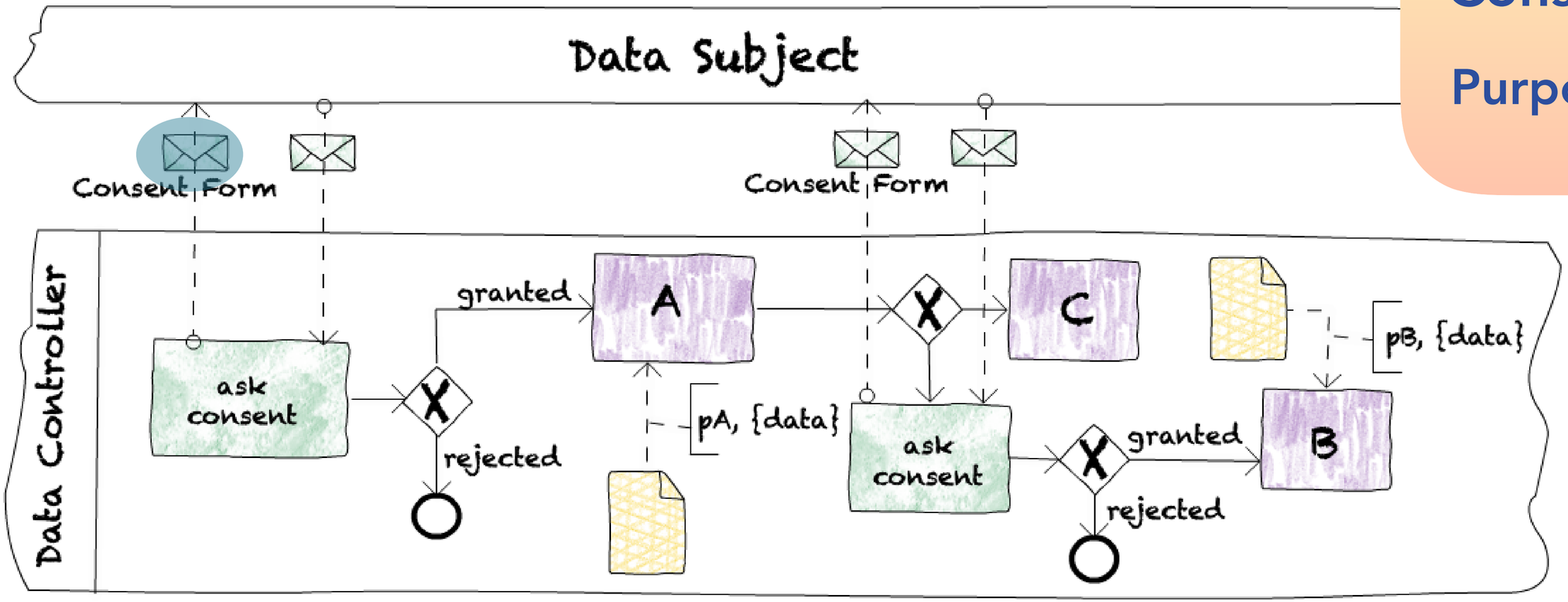
EXAMPLE #2 - *SEPARATE CONS*

Consent Form

Purpose



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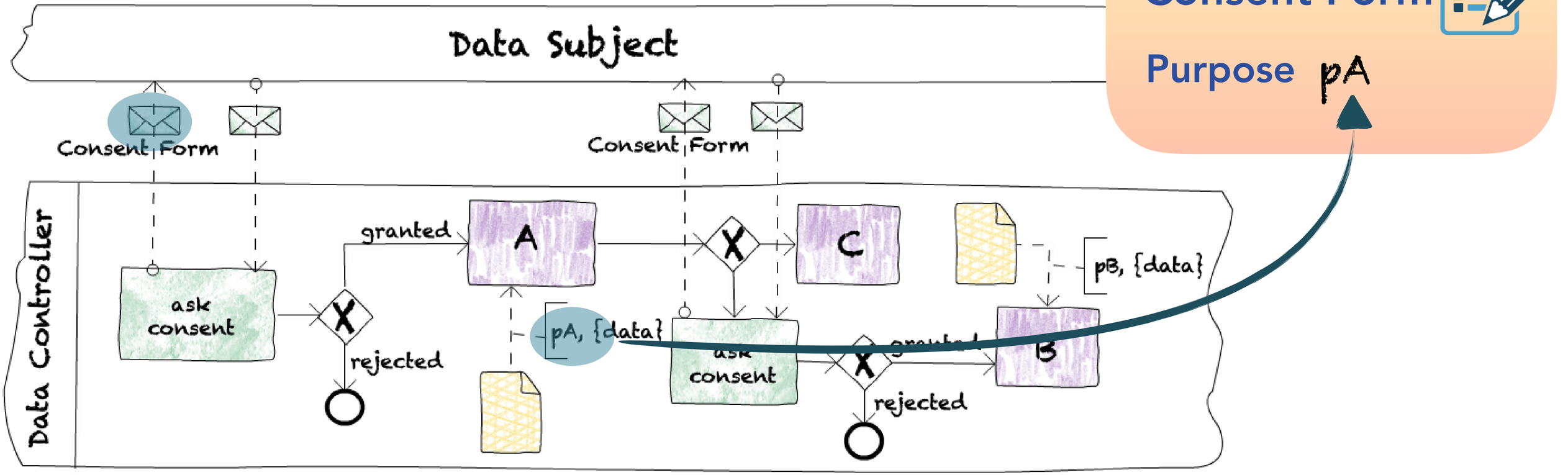

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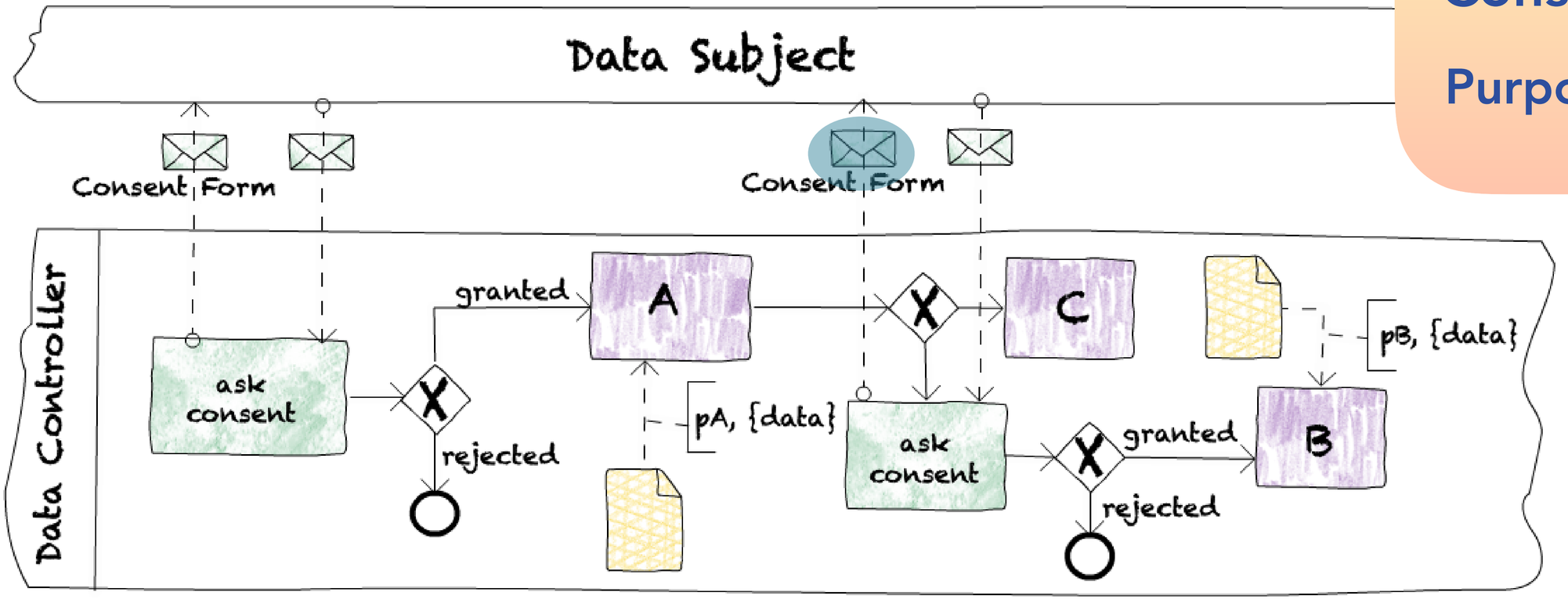

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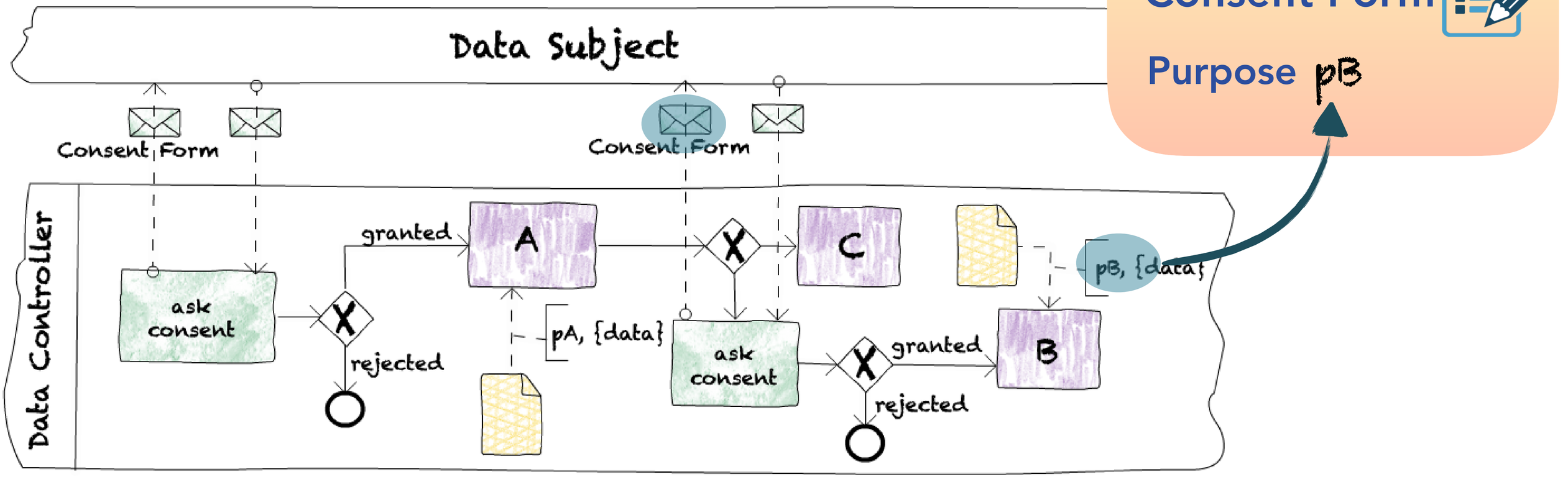

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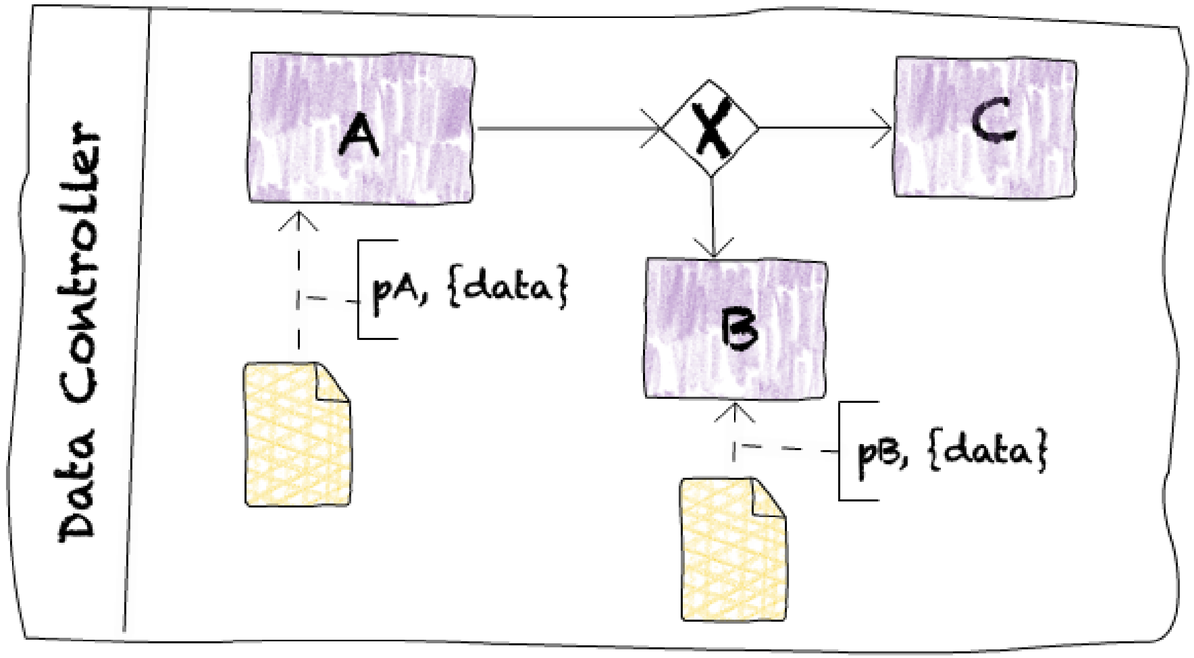
EXAMPLE #3 - *REVOCATION*



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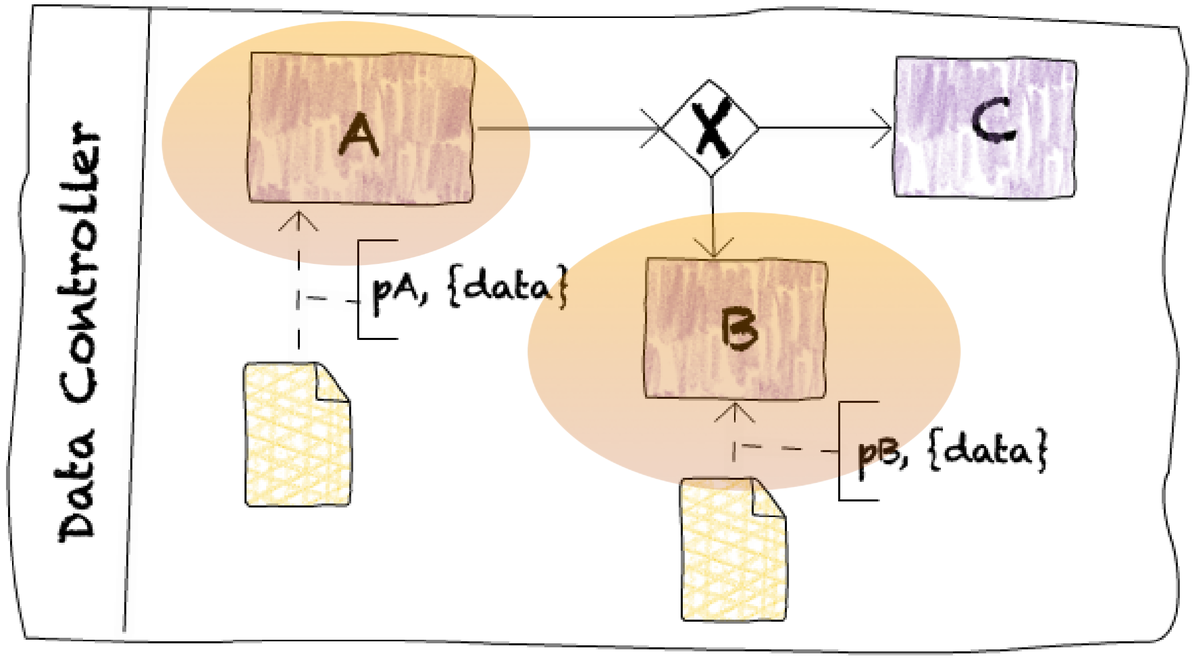
EXAMPLE #3 - *REVOCATION*



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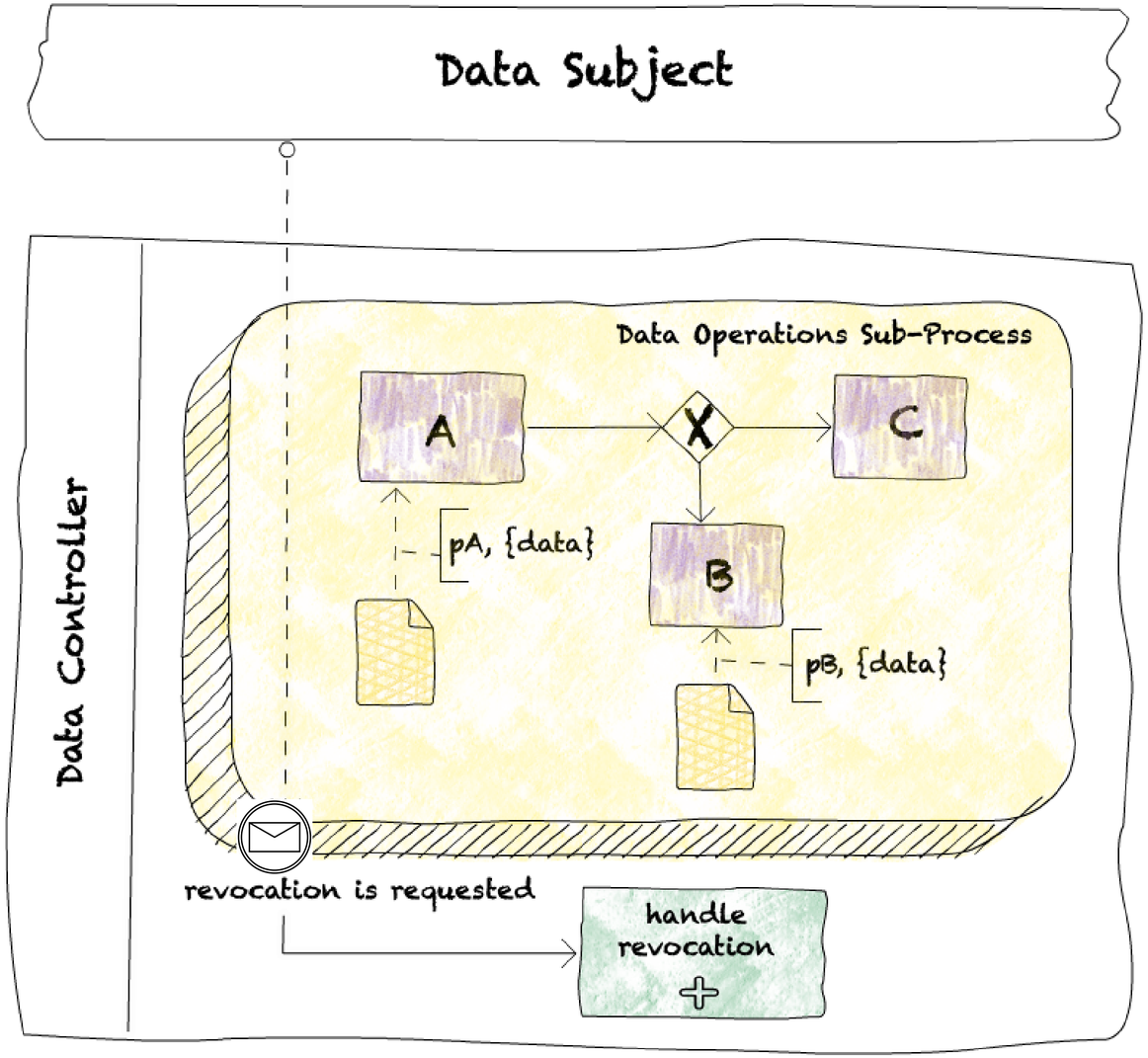

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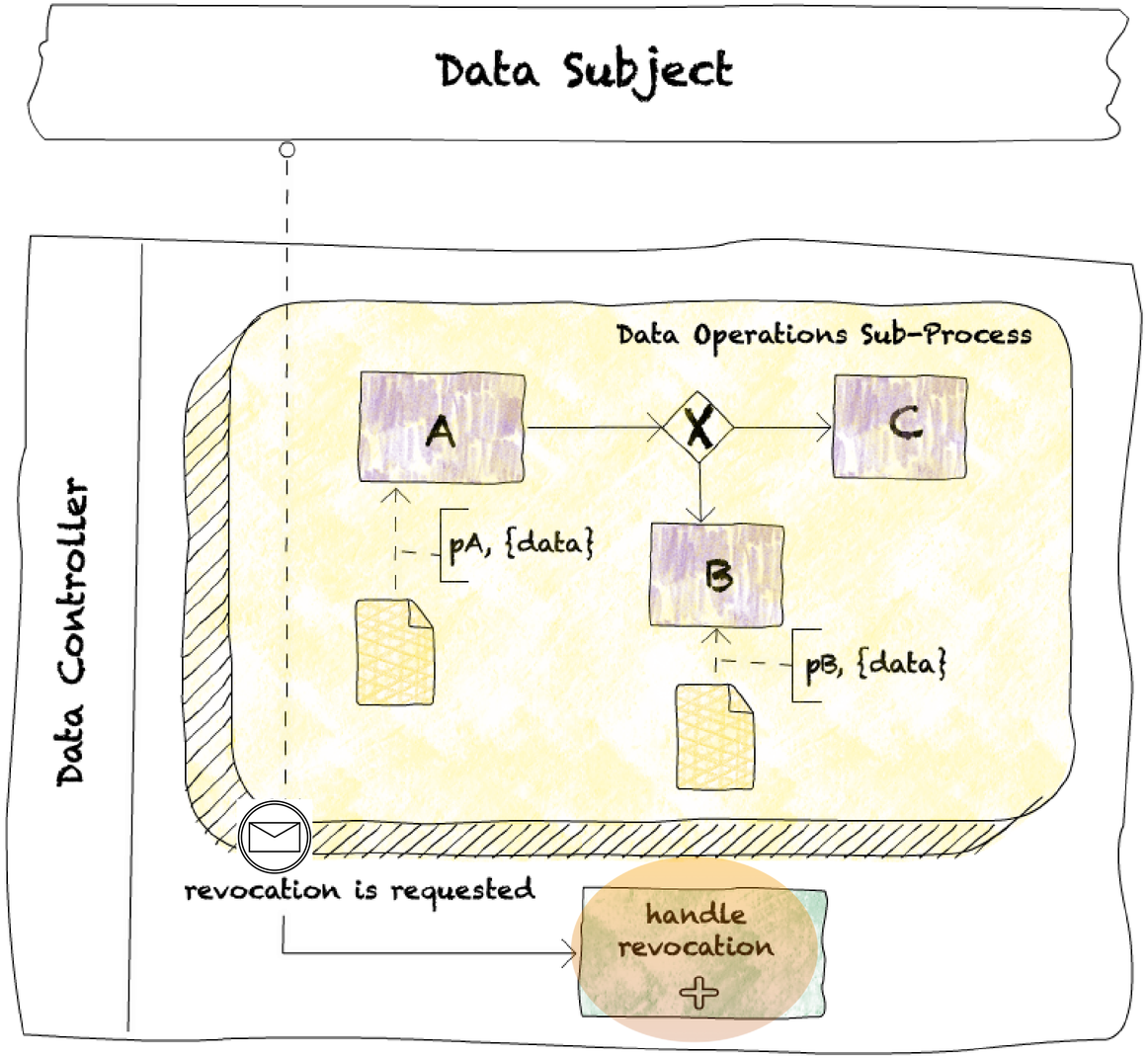

Collapsed Sub-Process

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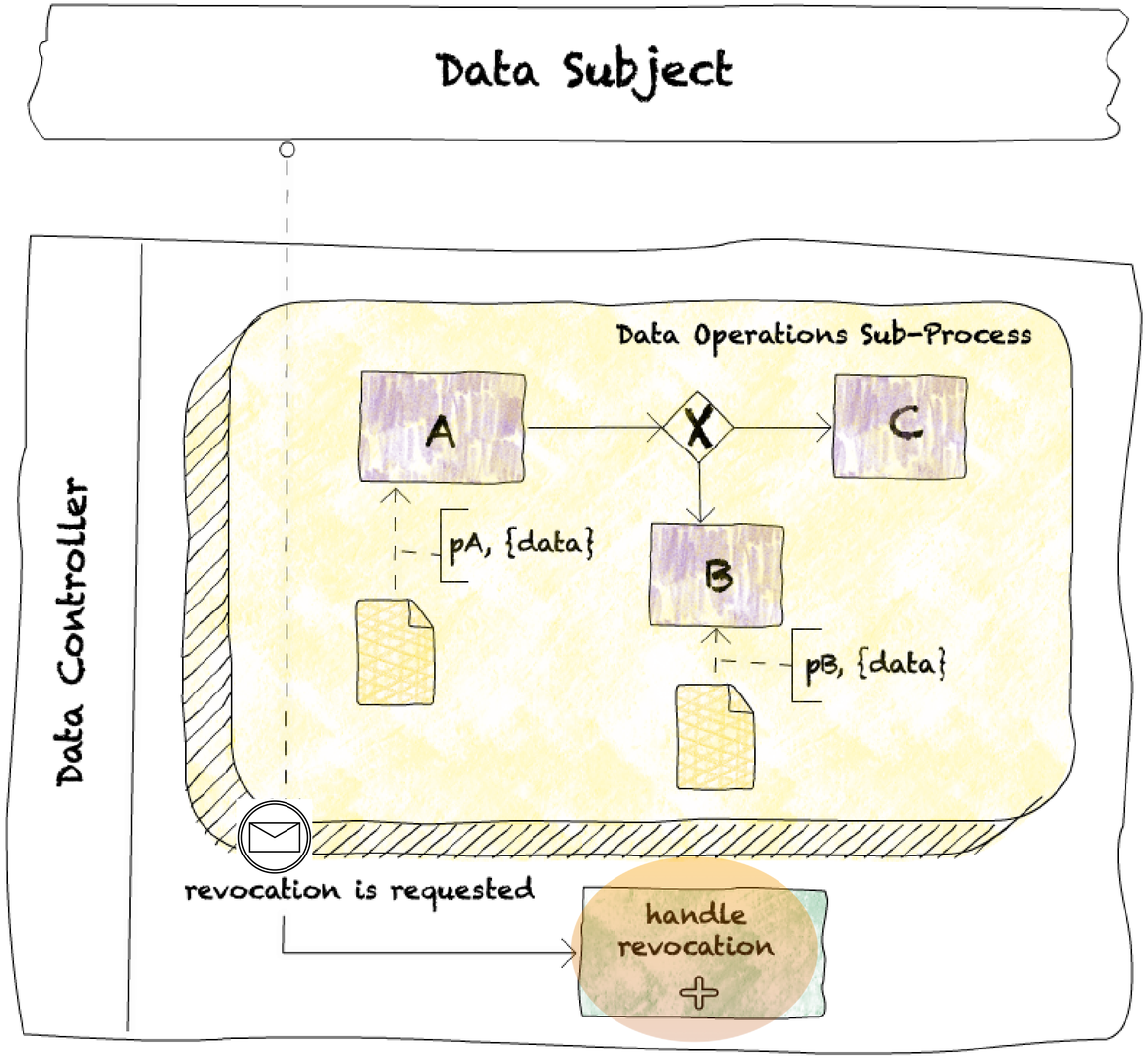

Collapsed Sub-Process

increases readability

SUMMARY

- Organizations processing personal data must consider **consent** & **revocation**

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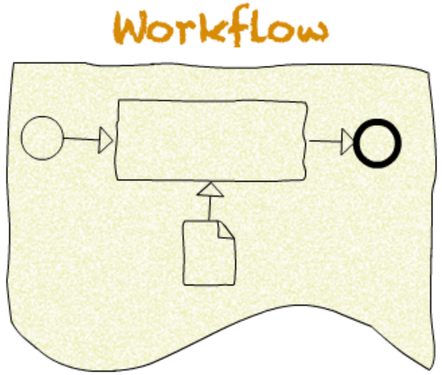

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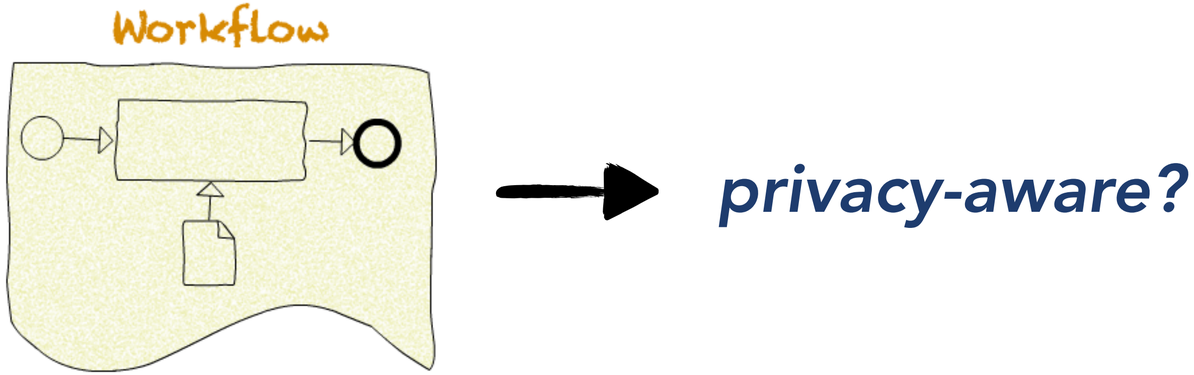

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- ***What are needed to handle consent in workflows?***

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- ***What are needed to handle consent in workflows?***
  - **Data-Aware Workflow**  **Consent Policy**  **Consent Form** 

- ***Approach: Design Patterns***

- *Approach: Design Patterns*
  - **Consent Pattern**

- *Approach: Design Patterns*
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OUTLOOK

- Analysis of the **optimality** of the design patterns

- *Approach: Design Patterns*
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OUTLOOK

- Analysis of the **optimality** of the design patterns
- Automatic transformation

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Thank you!!!

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