Methods and Tools for GDPR Compliance through

Privacy and Data Protection 4 Engineering

Eclipse Foundation Working Group: Privacy-by-Model community

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Open Research Webinars – March 3, 2021

OW2

Should privacy regulations be an engineer's job?
(Tip: It seems it should indeed)

PDP4E

IEEE SPECTRUM

SMASHING MAGAZINE

ABOUT THE AUTHOR

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about internet laws and policies which impact ...
about Heather...

FEBRUARY 27, 2018 • 47 COMMENTS

How GDPR Will Change The
You Develop

IEEE
Advancing Technology for Humanity

IEEE POSITION STATEMENT

In Support of Privacy Engineering

Adopted by the
IEEE Board of Directors

18 November 2018

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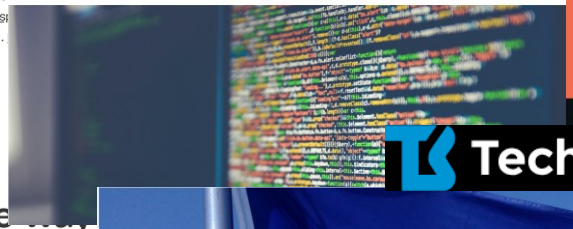
The Expression Assistant
Feb 21 · 7 min read

What Developers and Publishers Need to Know About the GDPR



TechBeacon

Private matters

15 steps to developing GDPR-compliant apps

RESOURCES_AT WORK

WHAT YOU NEED TO KNOW ABOUT EUROPE'S DATA PRIVACY RULES

NEW GDPR REGULATIONS ON PERSONAL DATA WILL AFFECT EVEN INDIVIDUAL CODERS

Your Guide to the GDPR

Here's what you need to know about the EU's General Data Protection Regulation, which goes into effect 25 May 2018

By Rosa Maria Garcia Sanz

HACKERNOON

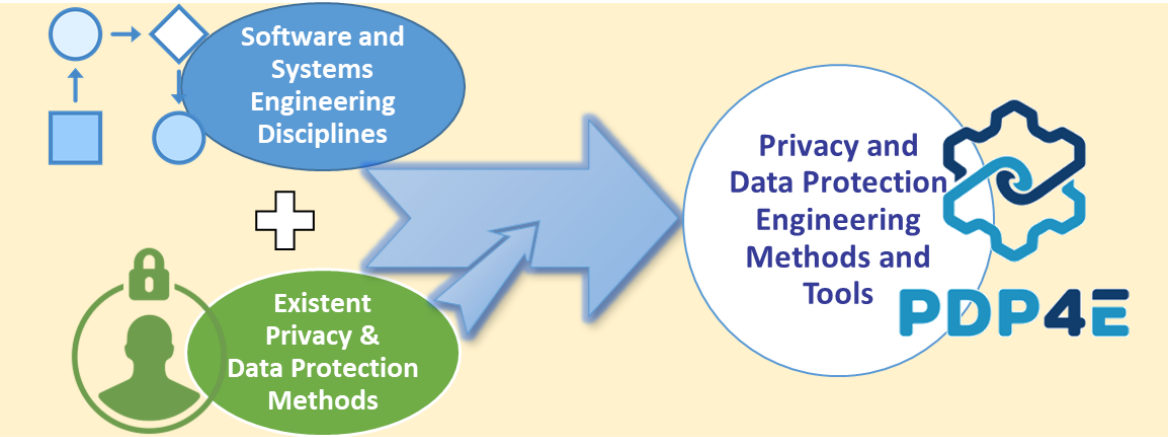
Bryan Soltis Follow
Technical Evangelist at @Kentico. @Microsoft MVP, Husband. Speaker. Father. Grandfather. Mediocre bowler. Available for a beer.
Dec 6, 2017 · 8 min read

I'm a Developer and General Data Protection Regulation (GDPR) is no big deal. Or is it?

CW2

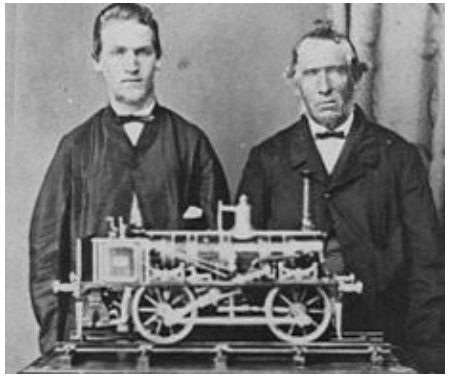
PDP4E response: what engineers need

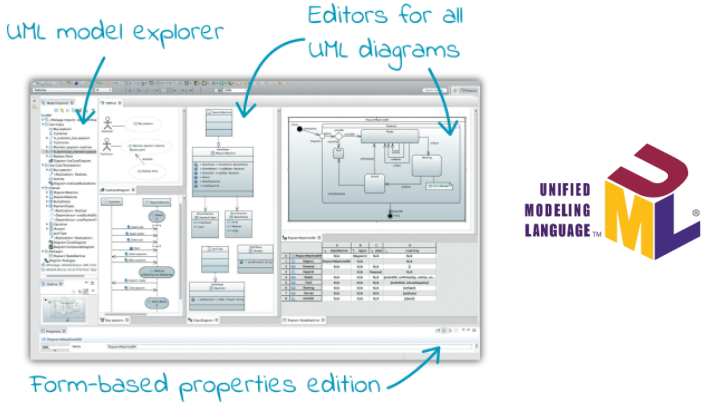
"Endow engineers with privacy and data protection tools aligned to their mindset"



Methods | Tools | Knowledge bases | Demonstrators | Community

Model engineering and Model-driven engineering



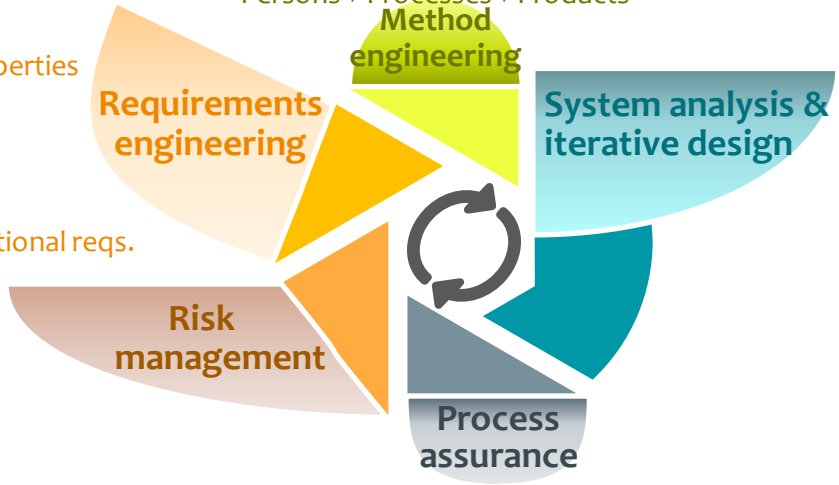


Model engineering
constructing proportionally-scaled miniature **working** representations of full-sized machines

Model driven engineering
expressing specifications through **processable** models. Diagram orientation (e.g. UML)

Complementary modelling views and disciplines for privacy engineering

Dev. Process. Model:
Persons + Processes + Products



Requirements Models:
- Privacy goals and properties
- Regulations (GDPR): principles, rights, obligations, measures
- Standards (ISO29100)

… in the context of functional reqs.

Assets model:
- What do we need to protect? (personal information, human rights, biz. reputation…)

Threats model:
- What from?

Controls model:
- How do we protect them?
- How do we know others protect them as well?

Reference framework model:
- What activities are mandated?
- Who shall carry them out?
- What artifacts shall be produced?

Assurance case:
- How can I argument that I'm compliant?
- Which evidences do I have to prove that?

Structural (data) model e.g.
- which data is personal?
- is it sensitive?
- what is the basis for collection?

Procedural (dataflow) model e.g.
- which processes deal with personal data?
- which processing operations it is being subject to?
- which data flows between operations?
- for what purpose it is being used?
- who is authorized to access that data?

Architectural (deployment) model
- who stores and processes data?
- under which jurisdiction?

Method and functional integration

Model-based engineering is well established

- Communities
  - OMG - 1989 (UML, BPMN, SysML)
  - Incose – 1990 (body of knowledge)
- Some URLs
  - http://www.omgwiki.org/MBSE/dol
  - https://www.sebokwiki.org/
- Some references
  - Model driven development. IEEE so
  - Model-based systems engineering: systems, man and cybernetics. Jan
- Standard under development
  - ISO/IEC 24641 Model-based systen

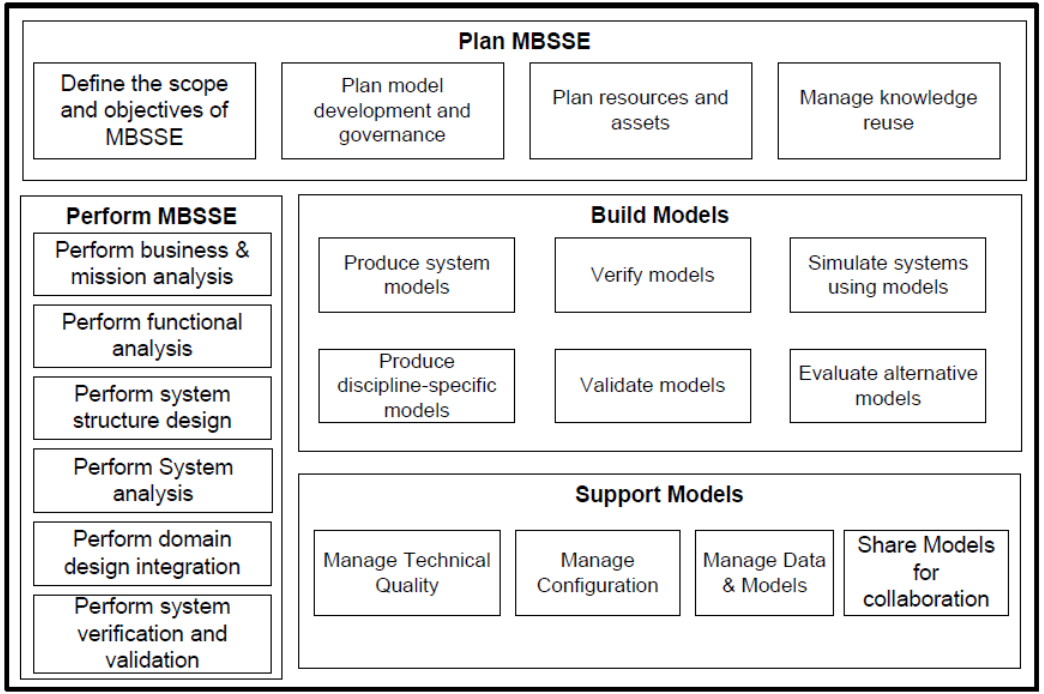
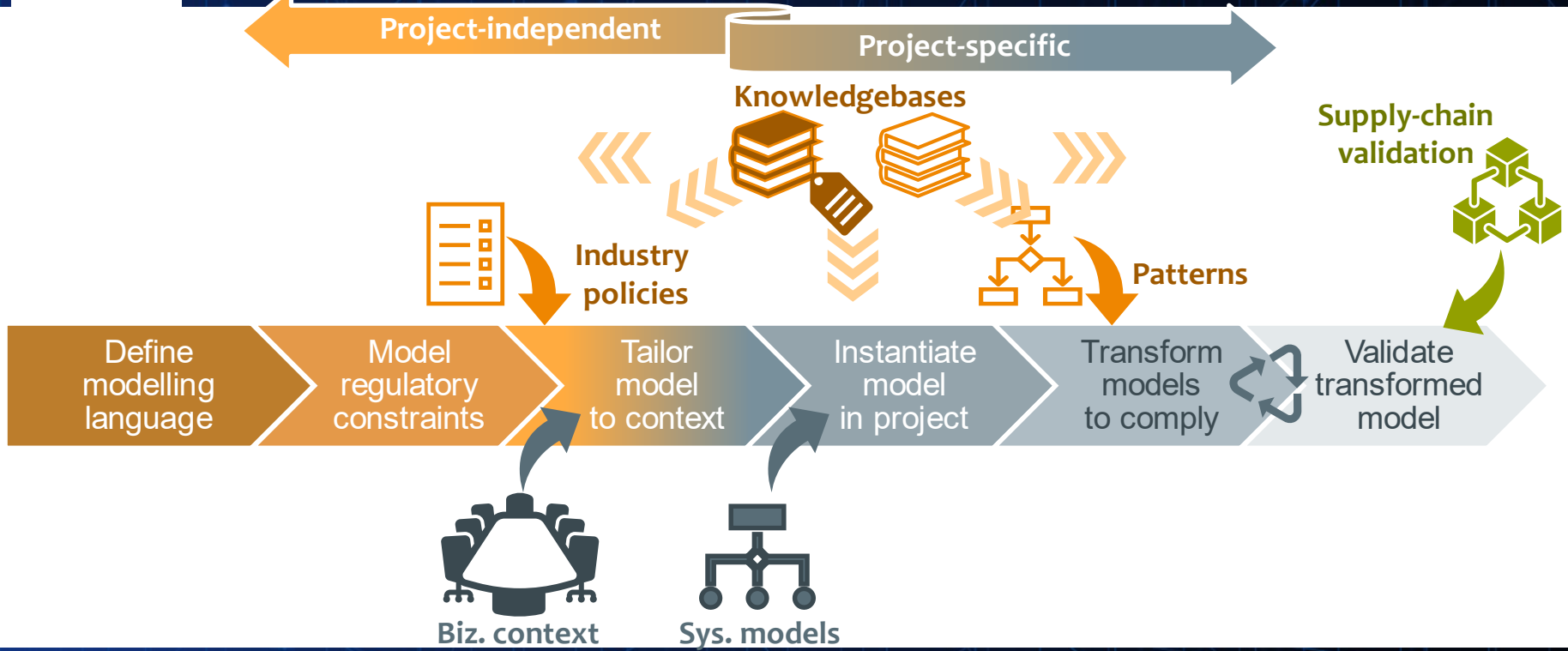
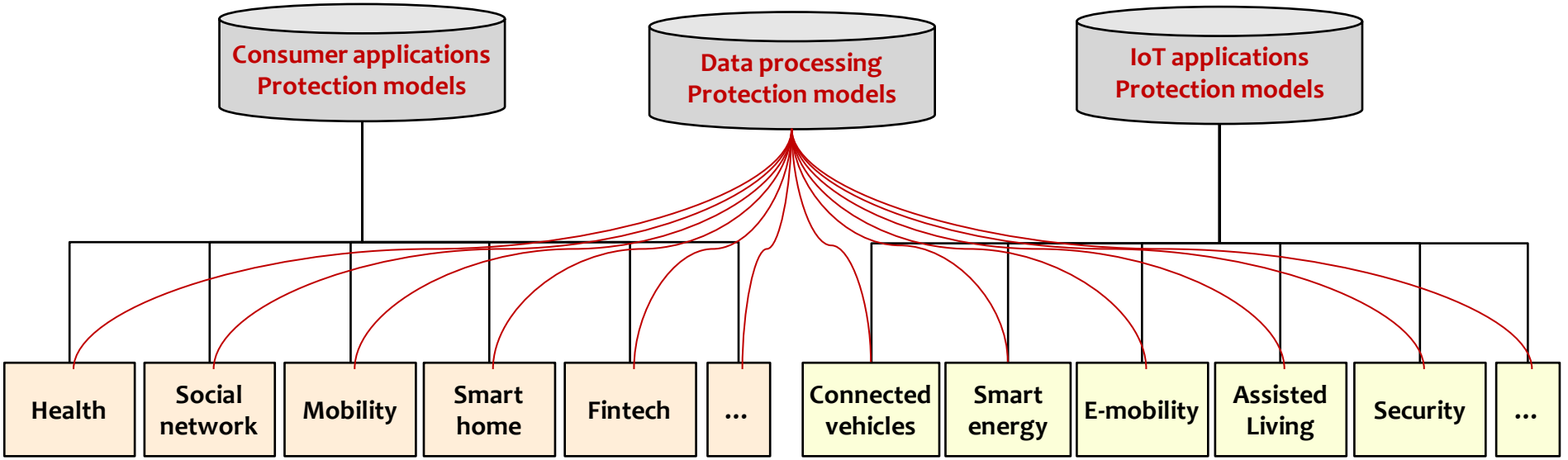


Figure 2 — MBSSE Process Reference model

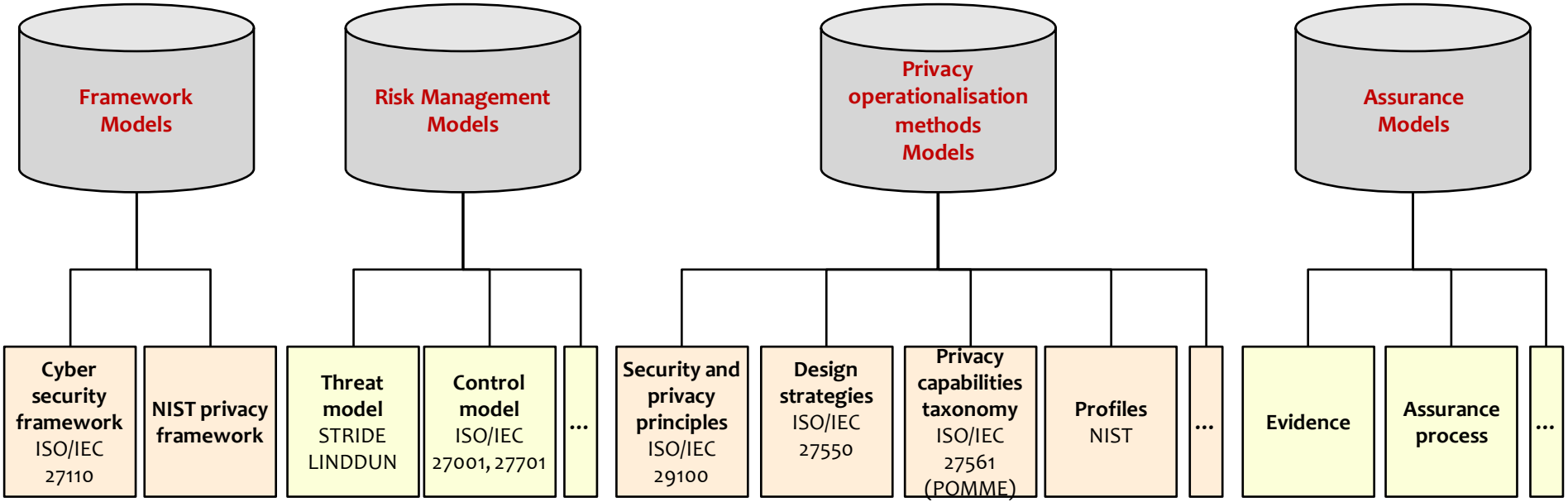
Model-based privacy engineering lifecycle?
(a.k.a. "~~Can we~~ *Dare we share & reuse models?*")



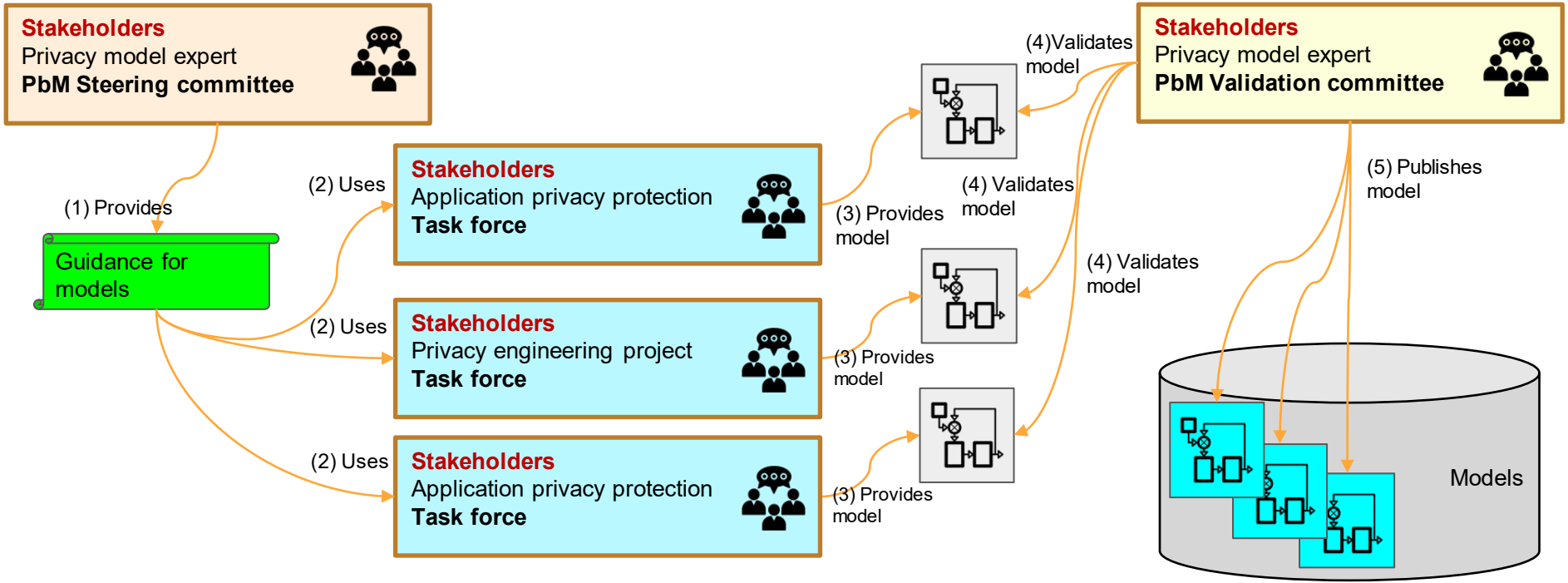
Application Privacy Protection Models



Privacy Engineering Project Models



Eclipse Privacy Protection Community (proposal)



The way forward

- Initial projects
  - Application privacy
    - C-ITS,
    - Smart grid data exchange
  - Privacy engineering
    - Risk analysis
    - Requirements engineering
    - Privacy-by-design
    - Assurance
- Community participants
  - Eclipse foundation
  - PDP4E partners
- Other potential participants
  - Ann Cavoukian
  - KU Leuven
  - NIST
  - U.Ulm
  - Data space stakholders
  - H2020 competence networks
- Other potential applications
  - Fintech

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PDP4E

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Community @ Eclipse Foundation

eclip.se/h0

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