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4CH BUILDING DIGITAL TWIN International Congress

UNIVERSITY OF CAMBRIDGE

Strategic Integration of Road Digital Twins for Streamlined Planning and Building Permitting

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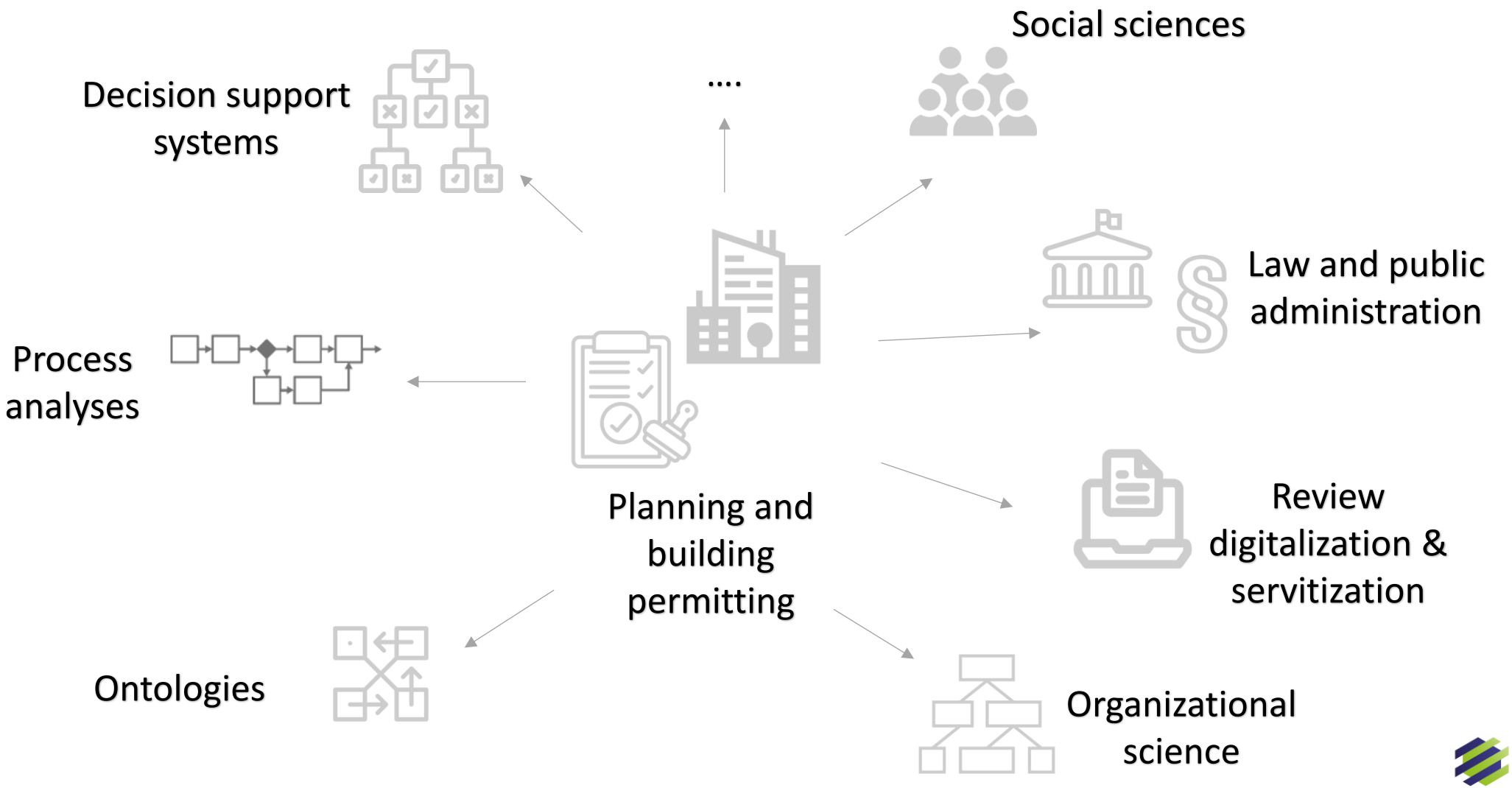
ORGANIZED BY:

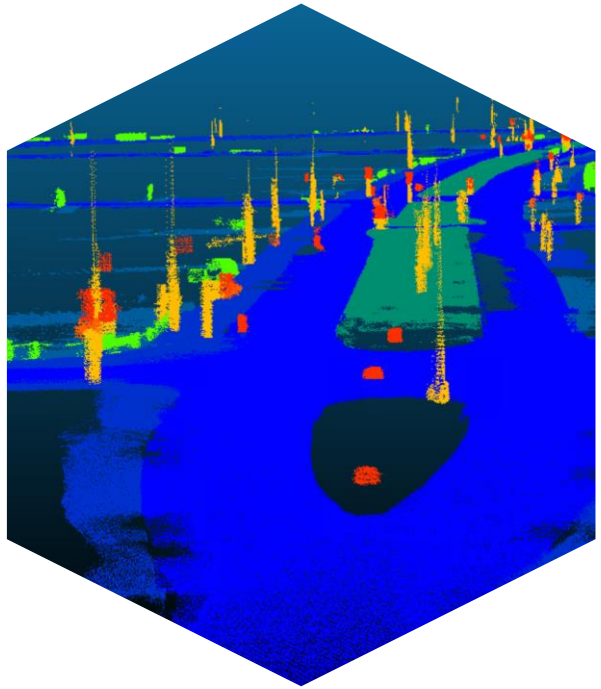
BDTA DigiChecks EUnet4DBP

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION´S HORIZON EUROPE RESEARCH AND INNOVATION PROGRAMME – PROJECT 101058541 – DIGICHECKS

Research focus



Digital Road of the Future Initiative



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Challenge DT6:

How can Road Digital Twins generate value from connecting areas?

- What are the use cases for DT-based building permitting?
- How a business model of DT-based building permitting looks like from a management perspective (processes, people, technology)?
- What information and what granularity of information are needed for these use cases?
- Where and how information is stored and communicated?
- Can DT-based building permit processes increase the certainty in construction and lower the risks in calculation (of time and costs)?
- How does the DT-based business model for building permits fit into building permit systems at an international level?

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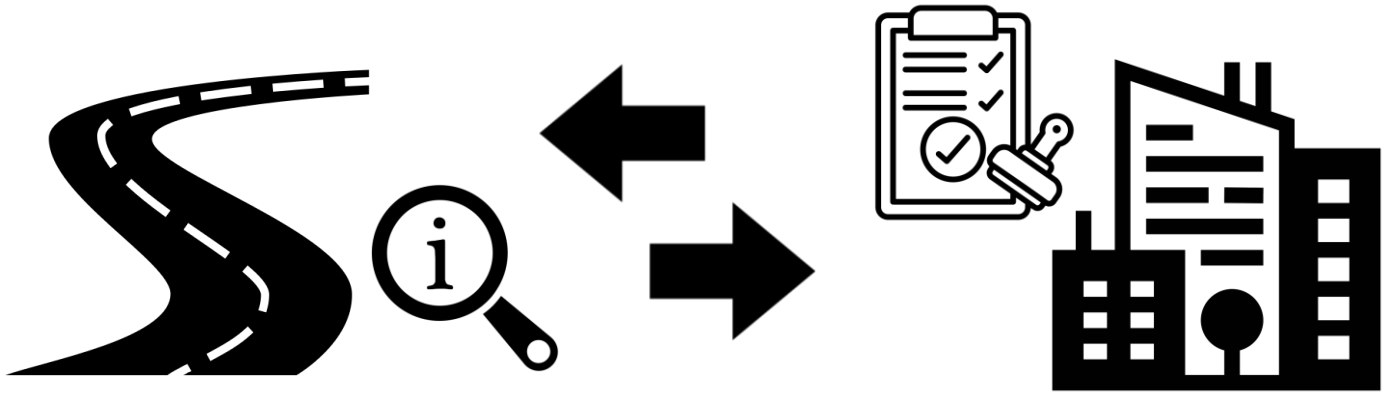
Project description

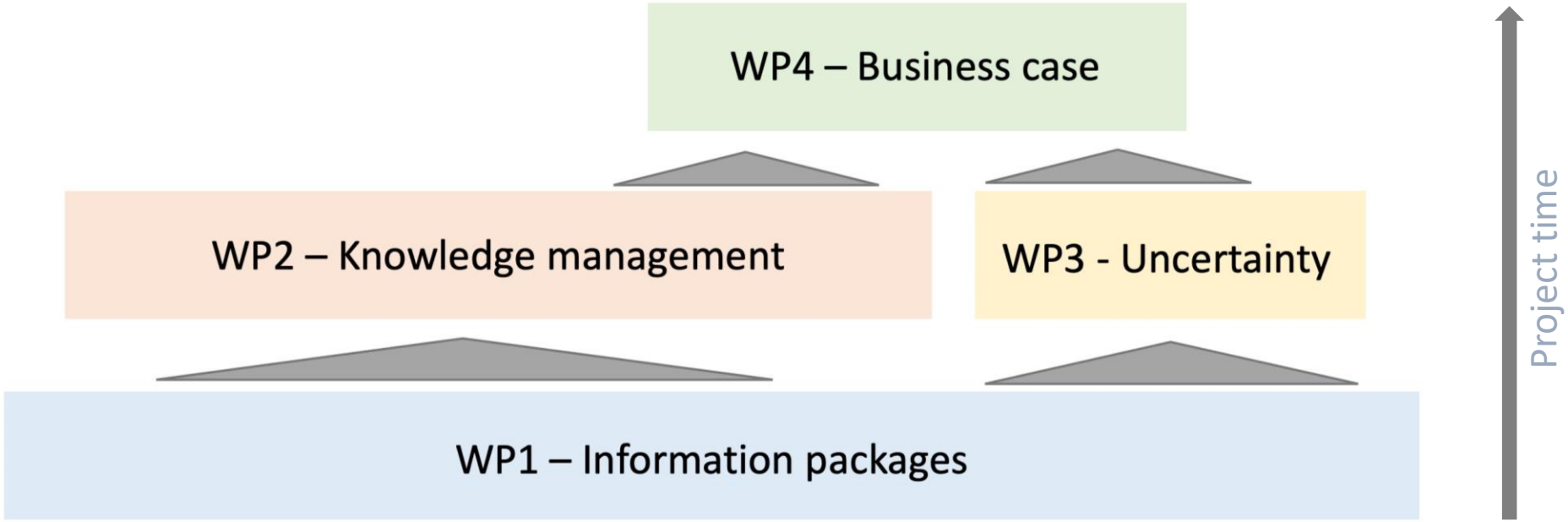
Title: Advanced Planning and Building Permits through Road Digital Twins



Objective:

- Linking road digital twins and building permits,
- reuse information, and
- leverage the connection to generate value

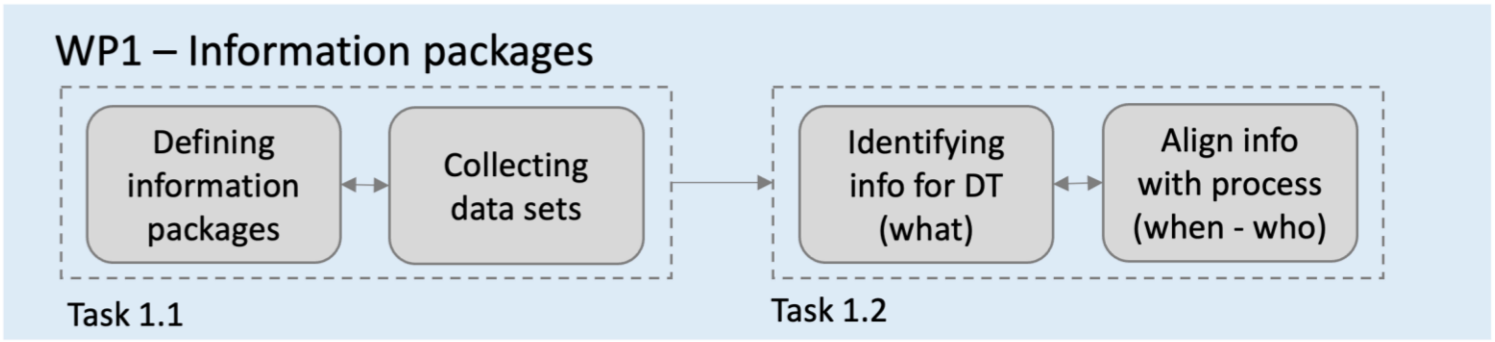
Work packages



Information packages

Examples of information packages:

1. Assurance of site development
2. Accessibility of plot of land and utilities provision (water, sewage, disposal, etc.)
3. Usage rights documentation
4. Justification of objections from neighbors and prevention of downstream legal actions
5. Participation of other involved agencies of public interest
6. Dynamic regulations



Knowledge management

WP4 – Business case

Develop business model

Task 4.1

WP2 – Knowledge management

Develop an ontology

Set up queries

Task 2.1

Case study scenarios

Task 2.2

WP3 - Uncertainty

Uncertainty analysis

Task 3.1

WP1 – Information packages

Defining information packages

Collecting data sets

Task 1.1

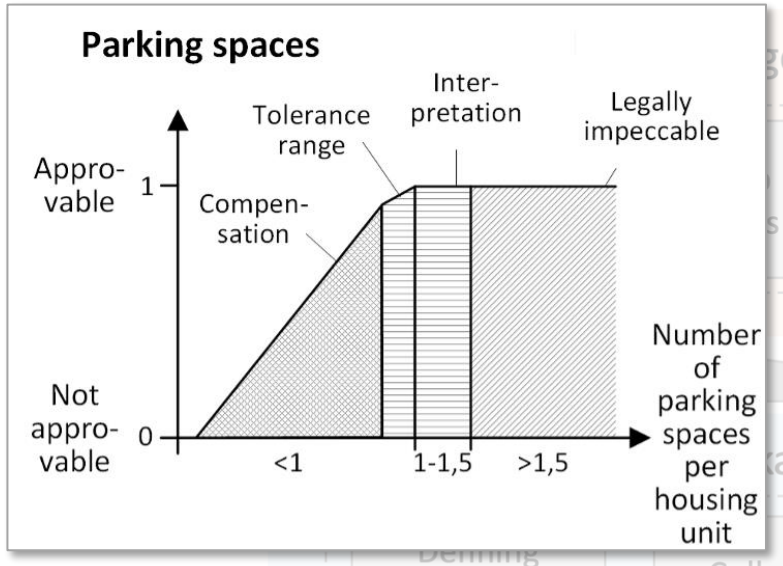
Identify info for (what

Task 1.2

Example queries:

1. „Give me all information required for usage rights documentation“
2. ”Give me all information required for the building application document”

Uncertainty analysis



WP4 – Business case

Develop business model

Task 4.1

Case study scenarios

Task 2.2

WP3 - Uncertainty

Uncertainty analysis

Task 3.1

Identifying info for DT (what)

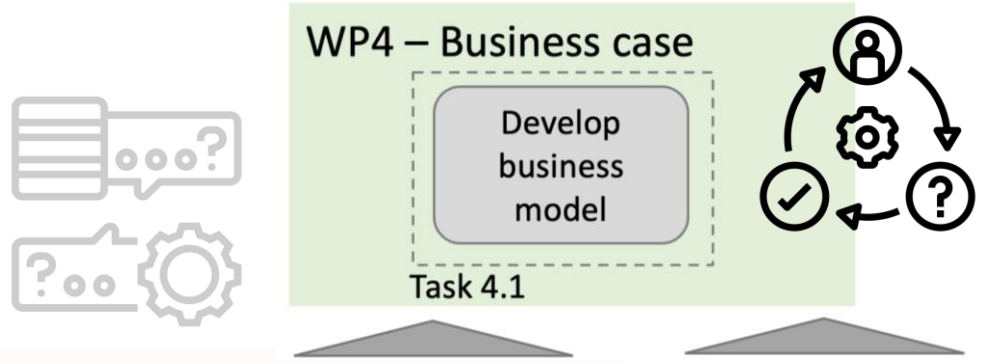
Collecting data sets

Task 1.1

Task 1.2

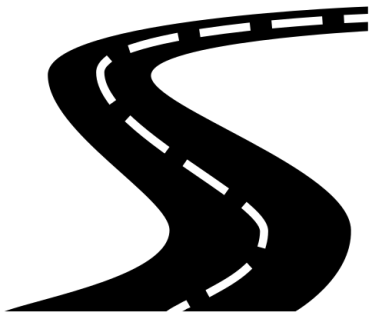
<u>Target outcome:</u>
Decision model
<u>Features:</u>
Resilient, flexible and scalable (accommodate the unknown case, cross-border)

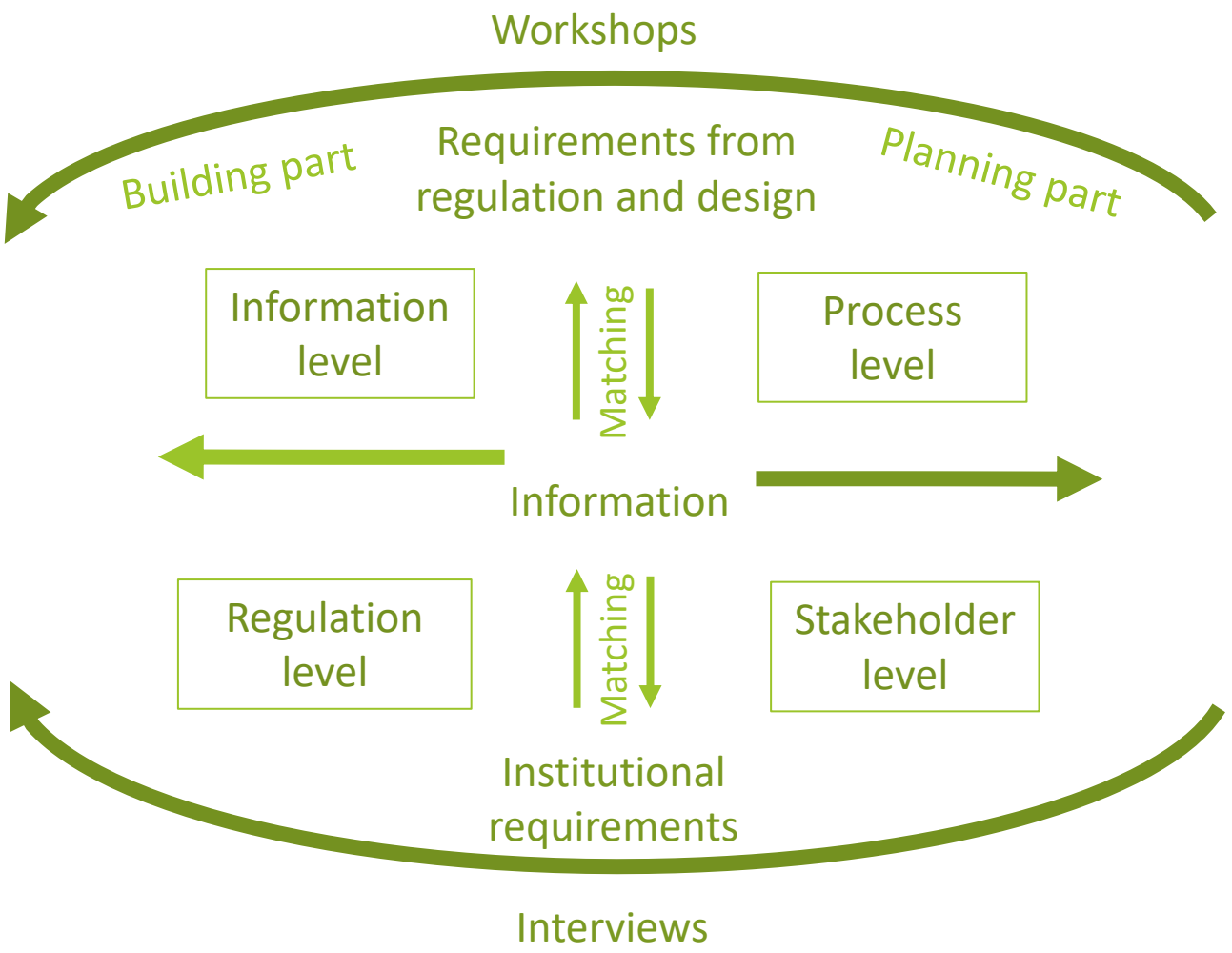
Business case



Calculation example:
300.000 permits/year in England
x 10 Pounds/information request
= 3 Mio. Pounds/year (e.g., for road maintenance)

Next steps




Workshops
Building part
Requirements from regulation and design
Planning part
Information level
Matching
Process level
Information
Regulation level
Matching
Stakeholder level
Institutional requirements
Interviews

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Acknowledgements

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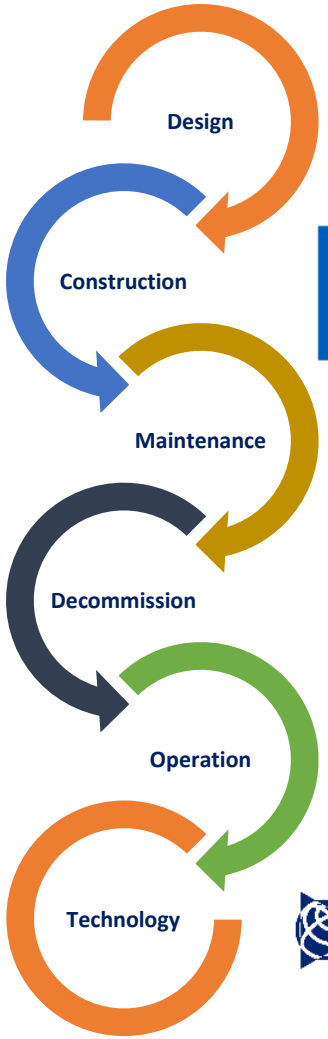

ATKINS Member of the SNC-Lavalin Group, AECOM, RAMBOLL, Jacobs, ARCADIS, COSTAIN, GallifordTry, keltbray, bam nuttall, Balfour Beatty, KIER, EUROVIA VINCI, ferrovial construction, amey, TRL, Ordnance Survey, COLAS, Department for Transport, national highways, telent, Trimble, SAP, Versarien PLC, Bentley

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THANK YOU!

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