Designing Systems Visualisations for Decision Support

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Background

Rapid technological progress is leading to increased complexity of engineering systems. This poses new challenges for designers of engineering systems, who constantly have to make design decisions about future products. As human decision makers are prone to making errors and may neglect important design factors, there is a need for improvement in decision-making processes, including through various support tools.

Our study will be bringing together data visualisations, systems approach and design communication in order to improve decision support systems. While systems perspective will help to capture the complexity of designed systems via data visualisations, the design communication angle will be addressing the effectiveness factors of these *systems visualisations* for decision-making.

Research questions

1. Do systems visualisations facilitate the communication between designers and stakeholders?

2. How to measure and improve the efficiency of systems visualisations for decision-making processes?

Methods

- Literature Review
- Case studies, experiments

Hypothesis

Compared to designers working without system visualisations, designers that use systems visualisations produce higher quality design decisions through improved communication between the designers and stakeholders.
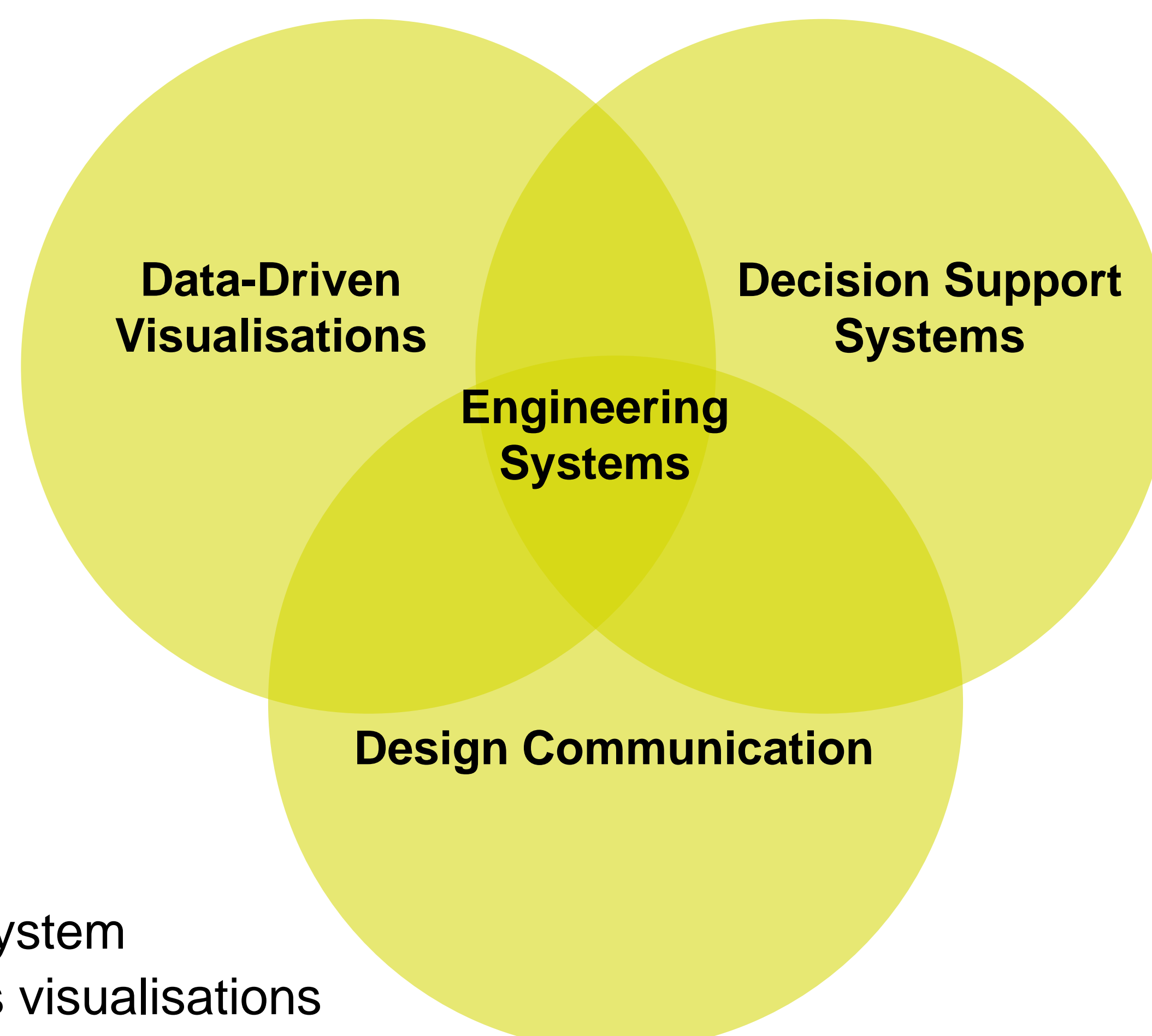
Expected results

Descriptive:
Develop understanding on key properties of systems visualisations that affect decision-making processes

Prescriptive:
Improved design of a systems visualisations framework for data-driven decision support systems

Data-Driven Visualisations

Decision Support Systems

Engineering Systems

Design Communication

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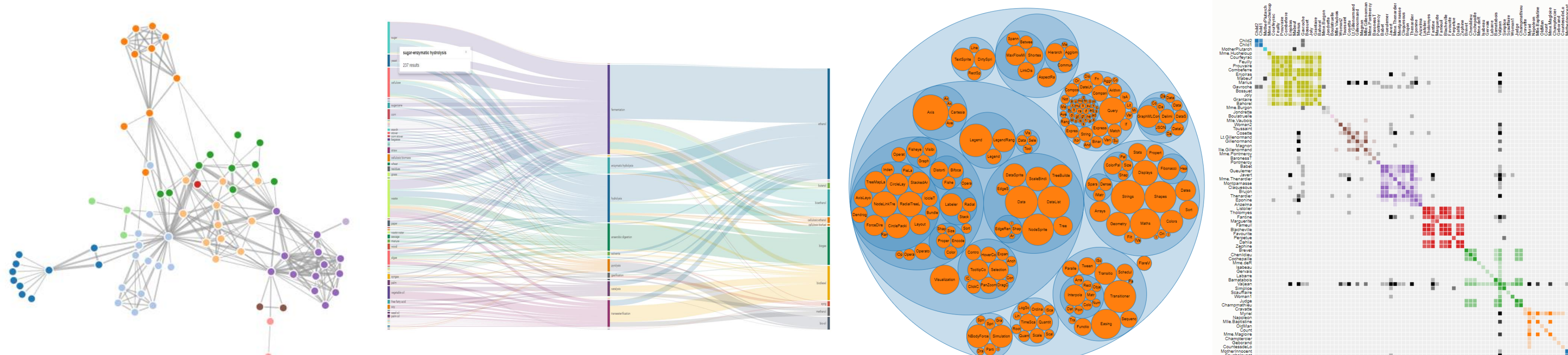Postdoctoral Researcher, PhD, Pedro Parraguez, DTU

Collaborating partners:

nesta

COTEC

Fraunhofer
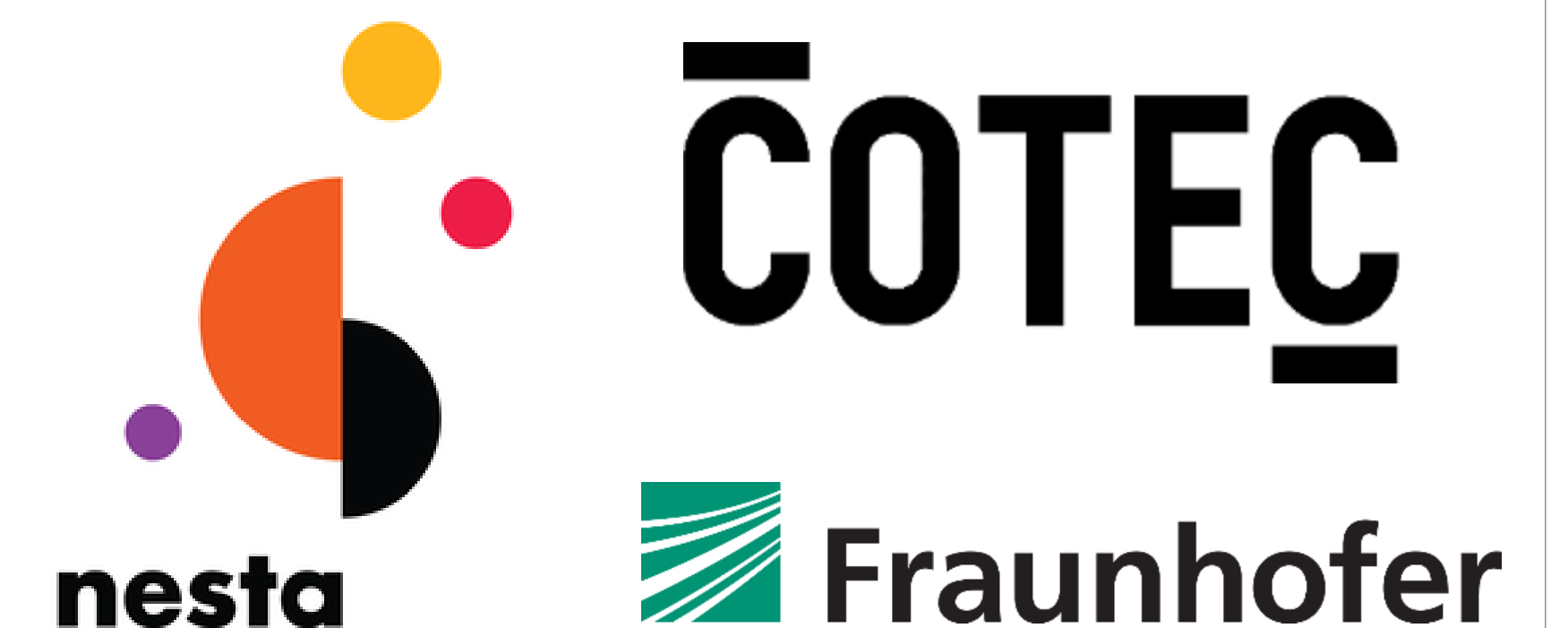
Start and completion date:
01 February 2018
to 31 January 2021

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