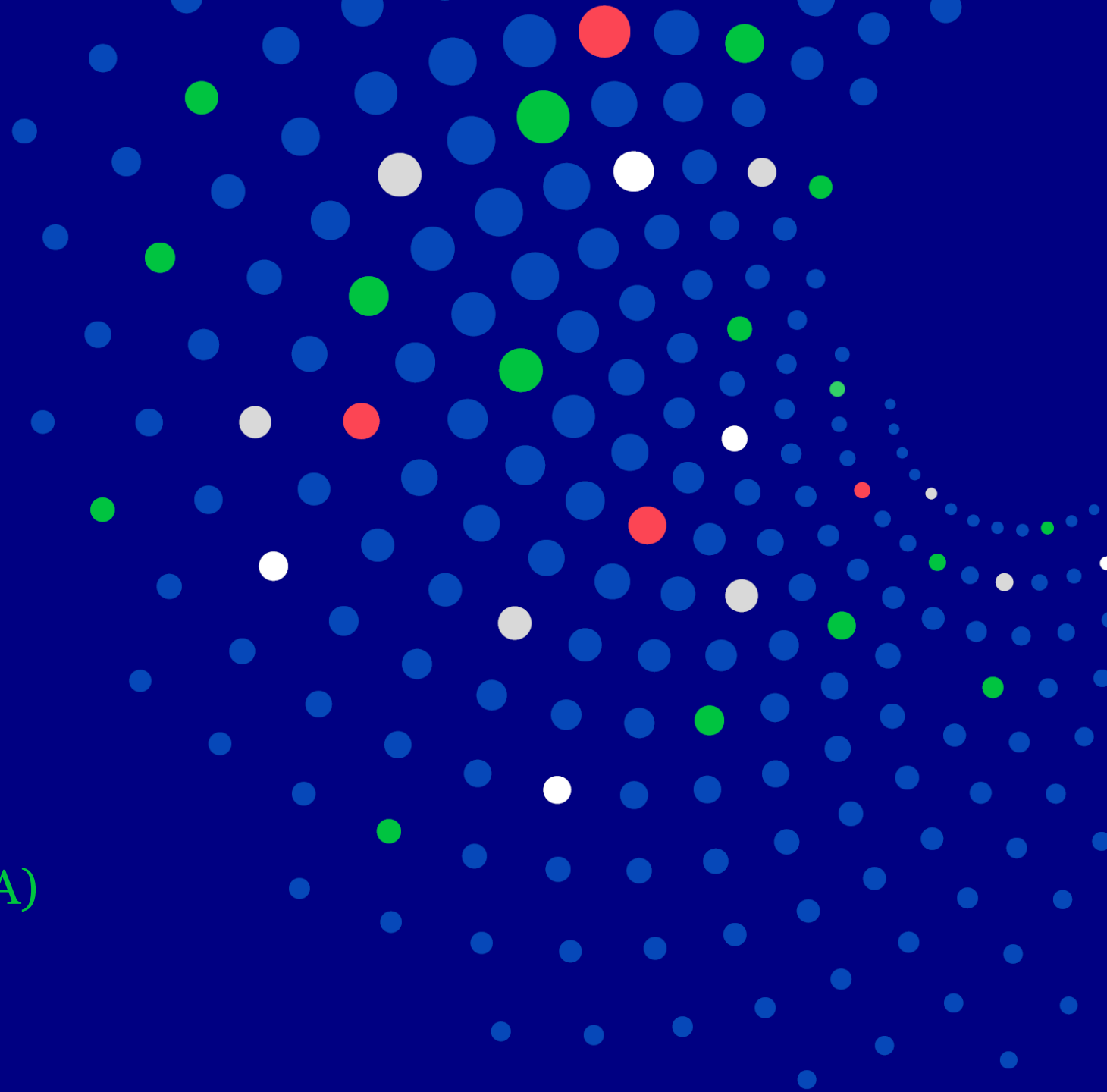# ITEA Topical roadshow

# Introduction

26 March 2024 | Online
Linda van den Borne-Toupet (ITEA)

# ITEA Topical roadshow
## Rationale

The ITEA Community consists of many bright and knowledgeable members.
Let's collaborate and leverage this strength!

- A series of online sessions co-organised with ITEA Community members

- Possibility to discuss both technical and managerial topics with the goal to share knowledge and improve ITEA projects

- Four sessions planned: March, May, October and December (but possibly more)

- Examples of possible sessions:

    - How to build trust in AI models?

    - What are the relevant IT technologies to develop precision agriculture?

    - How to manage Intellectual Property Rights in ITEA project?

    - Best practices for fostering gender equality and diversity in collaborative research projects.
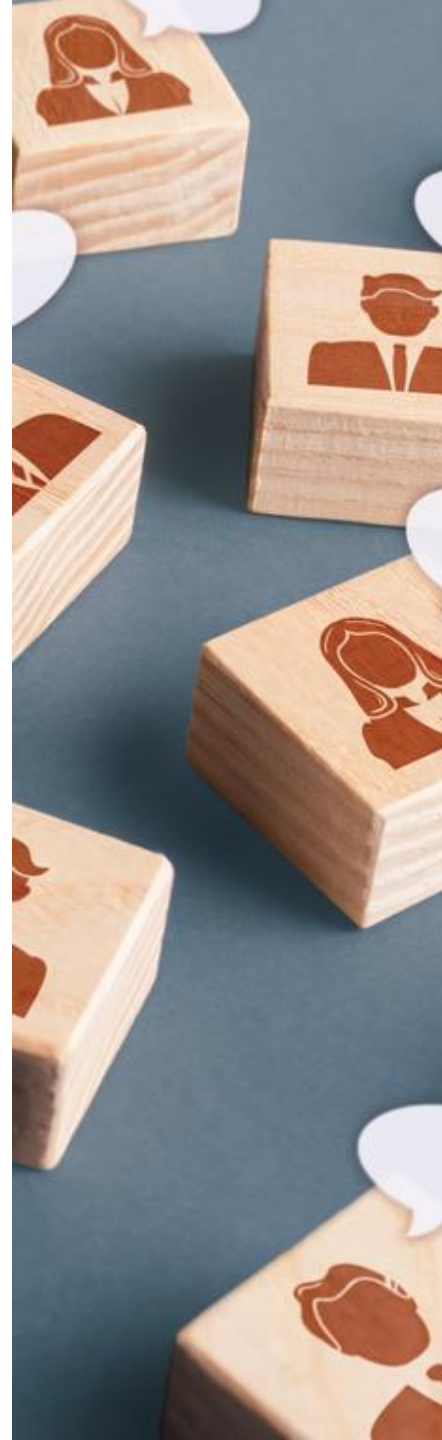
    - And many more!

ITEA4 | Σ
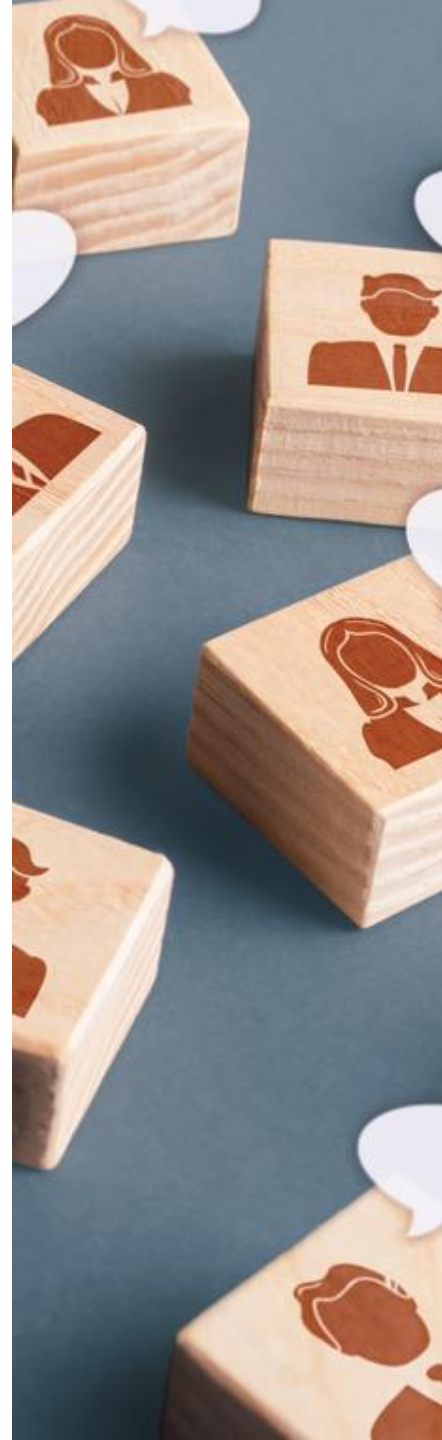
# ITEA Topical roadshow
## Submit your topic for future sessions

Do you have a topic that you would like to share
and openly discuss with the ITEA Community?
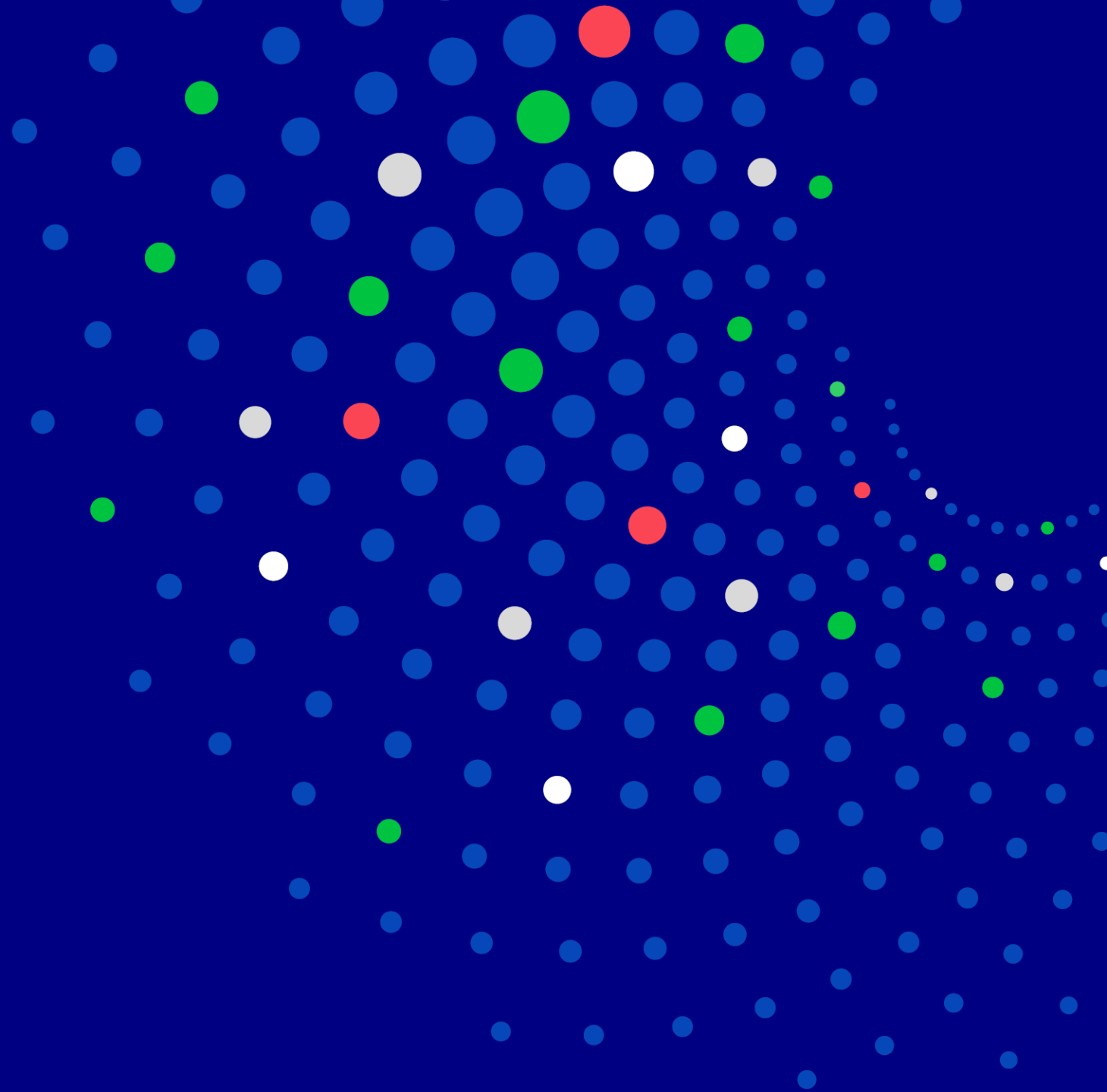
Submit your topic application via:

https://itea4.org/itea-topical-roadshow.html



ITEA4 | Σ

# ITEA Topical roadshow Large Language Models session

# Introduction

26 March 2024 | Online
Jean-François Lavignon (ITEA)

# Generative AI and LLM
## Interest from the ITEA Community

- ITEA Call 2023: 10 out of the 24 Full Project Proposals plan to use LLM

- Fast moving landscape and a lot of opportunities

- Added value creation is the central challenge to be in position to create business

- Sharing expertise and knowledge to select best practices

# LLM
## Technology evolution creates options
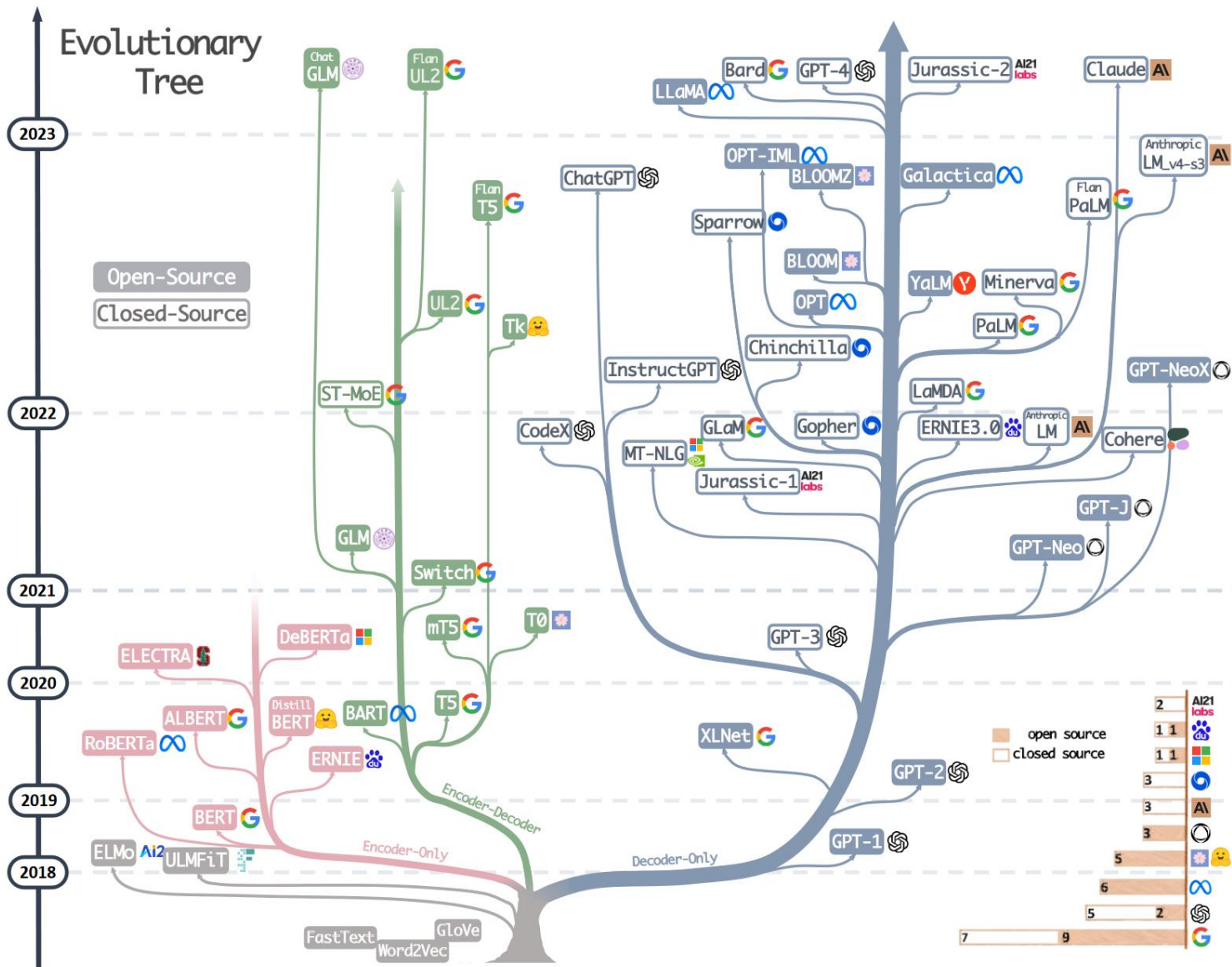
# LLM
## Power consumption and CO₂ emissions

## Model creation

| Model name | Number of parameters | Power consumption | CO$_2$eq emissions |
|---|---|---|---|
| GPT-3 | 175B | 1,287 MWh | *502 tons* |
| Gopher | 280B | *1,066 MWh* | *352 tons* |
| OPT | 175B | *324 MWh* | 70 tons |
| BLOOM | 176B | 433 MWh | 25 tons |

## Query

The estimated energy consumption of a Google search query is 0.0003 kWh (1.08 kJ) per query.

The estimated energy consumption of a ChatGPT-4 query 0.001-0.01 kWh (3.6-36 kJ) * per query, depending on the model size and number of tokens processed.

# ITEA Topical roadshow
## Agenda

- Generative AI for the software development life cycle by Robin Gröpler - Institut for Automation und Kommunication (IFAK)

- LLMs for new services by Abdelkrim Boujraf - ALT-F1

- Trustworthiness and ethical topics of LLM by Mikko Raatikainen - University of Helsinki

- Generative AI in media: challenges and learnings by Karim Dahdah – VRT

- Open discussion with all participants and additional testimonials from participants