

# AI Ethics and Governance in Practice

## An Introduction

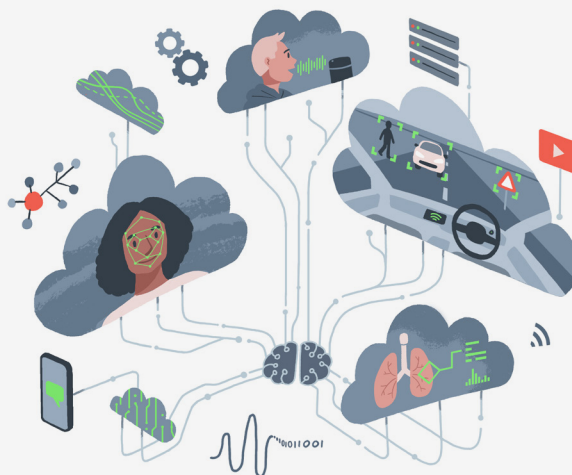
### What is the AI Ethics and Governance in Practice Programme?

In 2021, the UK's National AI Strategy recommended that UK Government's official Public Sector Guidance on AI Ethics and Safety be transformed into a series of practice-based workbooks. The result is the AI Ethics and Governance in Practice Programme. This series of eight workbooks provides end-to-end guidance on how to apply principles of AI ethics and safety to the design, development, deployment, and maintenance of AI systems. It provides public sector organisations with a Process-Based Governance (PBG) Framework designed to assist AI project teams in ensuring that the AI technologies they build, procure, or use are ethical, safe, and responsible.

### At a Glance

Introduces fundamental concepts of artificial intelligence (AI), responsible research and innovation (RRI), and AI ethics and governance.

- An **AI lifecycle model** that centers the sociotechnical aspect of design and use practices.
- The **CARE and Act Framework** for building an RRI culture of good practice.
- The **Process-Based Governance (PBG) Framework** to ensure end-to-end accountability across the AI workflow and provide a template for documenting necessary governance actions.



# Key Concepts

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## AI System

Any computational or software-based system (or a combination of such systems) that uses methods derived from statistics, other mathematical techniques, or rule-based approaches to carry out tasks that are commonly associated with, or would otherwise require, human intelligence.



## Machine Learning (ML)

A popular approach to AI that uses training data to build algorithmic models which find patterns in and draw inferences from that data. When training is completed, ML models can then ingest new or unseen data to predict outcomes for particular instances.



## Sociotechnical Aspect of AI

AI projects are affected by the interconnected relation between AI technologies and the social environments in which their development and use is embedded. Both elements interact and influence each other. A sociotechnical approach treats AI systems as both social and technical constructs.



## Responsible Research and Innovation (RRI)

A model for reflecting on, anticipating, and deliberating about the ethical and social questions that arise in the development of AI systems. RRI provides methods for identifying and evaluating potential impacts of AI technologies and addressing challenges.



## AI Ethics

AI ethics tackles the social and moral implications of the production and use of AI technologies. It explores the values, principles, and governance mechanisms needed to ensure the responsible and trustworthy design, development, deployment, and maintenance of AI systems.



## CARE and Act Framework

A tool for sense-checking and reflecting on the values, purposes, and interests that steer AI/ML projects, as well as projects' real-world implications. This involves considering context, anticipating impacts, reflecting on purpose, engaging inclusively, and acting transparently and responsibly.

# Workbook Summary

AI systems may have transformative and long-term effects on individuals and society. To manage these impacts responsibly and direct the development of AI systems toward optimal public benefit, considerations of AI ethics and governance must be a first priority.

In this workbook, we introduce and describe our PBG Framework, a multi-tiered governance model that enables project teams to integrate ethical values and practical principles into their innovation practices and to have clear mechanisms for demonstrating and documenting this.

# CARE and Act Framework

## C Consider Context

Think about the conditions and circumstances surrounding your AI project.

## A Anticipate Impacts

Describe and analyse the impacts, intended or not, that might arise from your project.

## R Reflect on Purposes, Positionality, and Power

Reflect on the goals of and motivations for the project; Scrutinise perspectival limitations; Reflect on the power imbalances.

## E Engage Inclusively

Open up such visions and questioning to broader deliberation, dialogue, engagement, and debate in an inclusive way.

## Act Act Transparently and Responsibly

Use these processes to influence the direction and trajectory of the research and innovation process itself.

*Adapted from EPSRC's AREA framework*

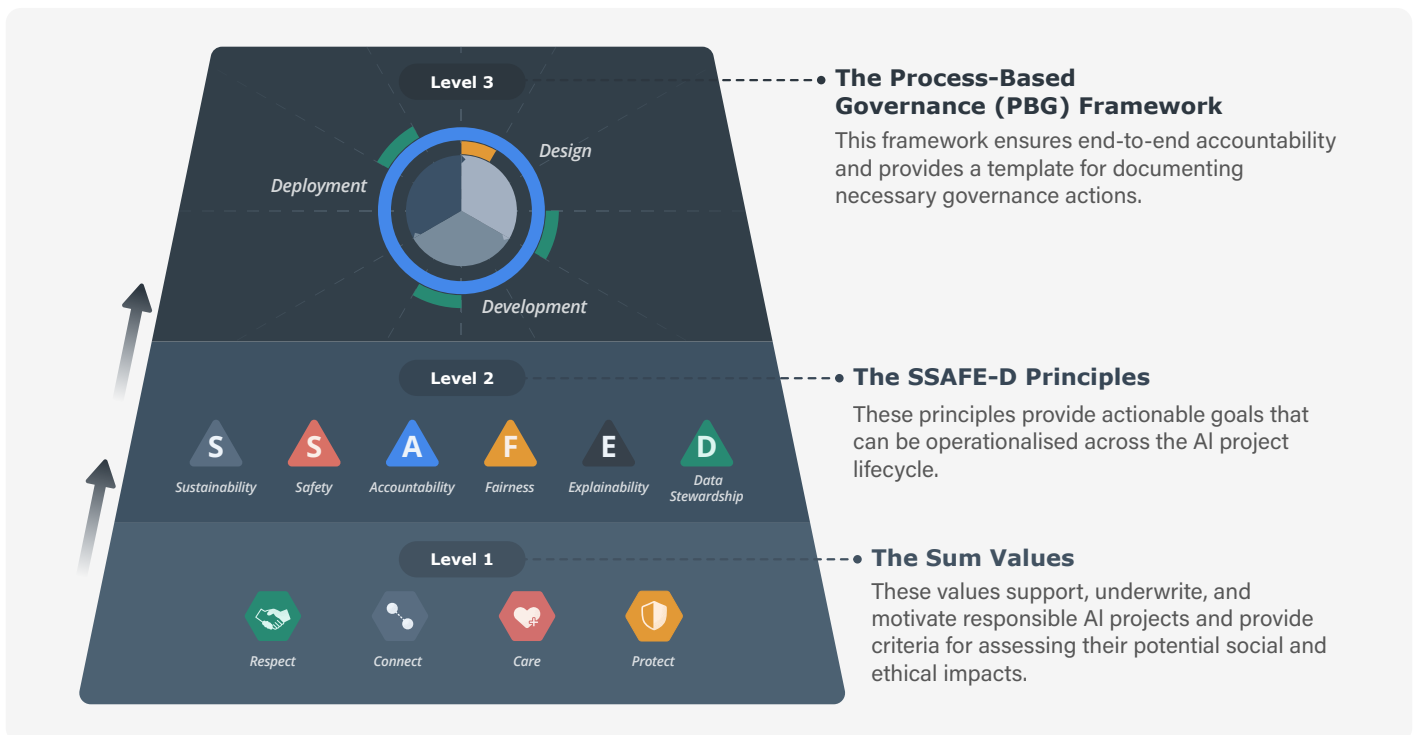


Figure 1: Three building-blocks of a responsible and trustworthy AI project lifecycle

# The Process-Based Governance (PBG) Framework

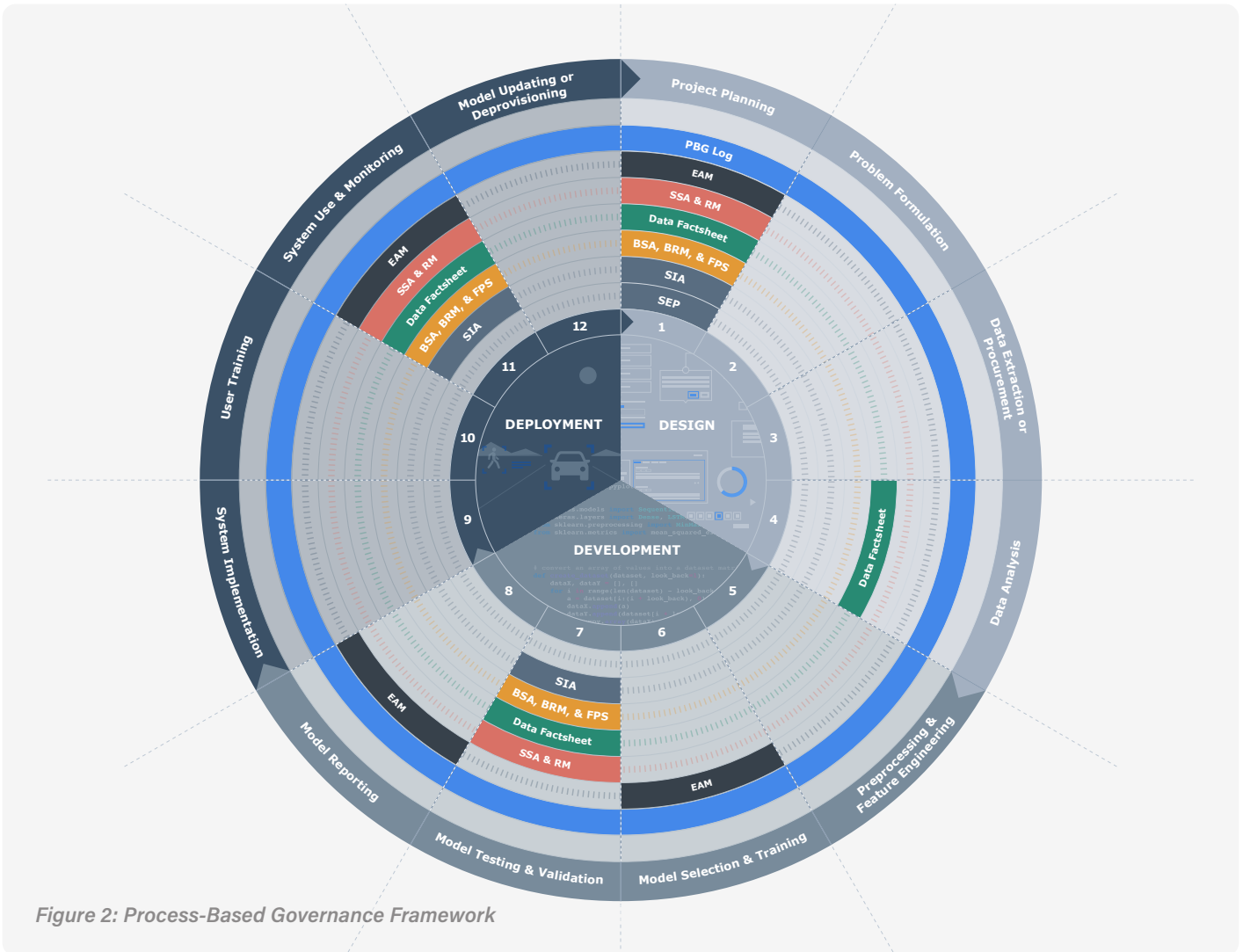


Figure 2: Process-Based Governance Framework

The purpose of the PBG Framework is to ensure that the entirety of the SSAFE-D Principles are successfully operationalised and documented across the AI project lifecycle. It is a template that provides a landscape view of where in the AI project workflow governance actions are to take place in order to integrate each of the SSAFE-D principles within AI project activities. It is accompanied by a PBG Log which provides documentation of:

- Established governance actions across the project lifecycle.
- Relevant team members and roles involved in each governance action.

- Explicit timeframes for follow-up actions, re-assessments, and continual monitoring.
- Clear and well-defined protocols for logging activity and instituting mechanisms for end-to-end audibility.



For detailed information about authorships, acknowledgements, and references, please consult the **AI Ethics and Governance in Practice: An Introduction** workbook.