BCO Network

BCO Network WEBseries 17

Cloud & AI IPCEI Status and next steps

14 October 2025

Speaker:
Michael Hanke, BMWE

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Michael Hanke, Management Advisor BMWE,

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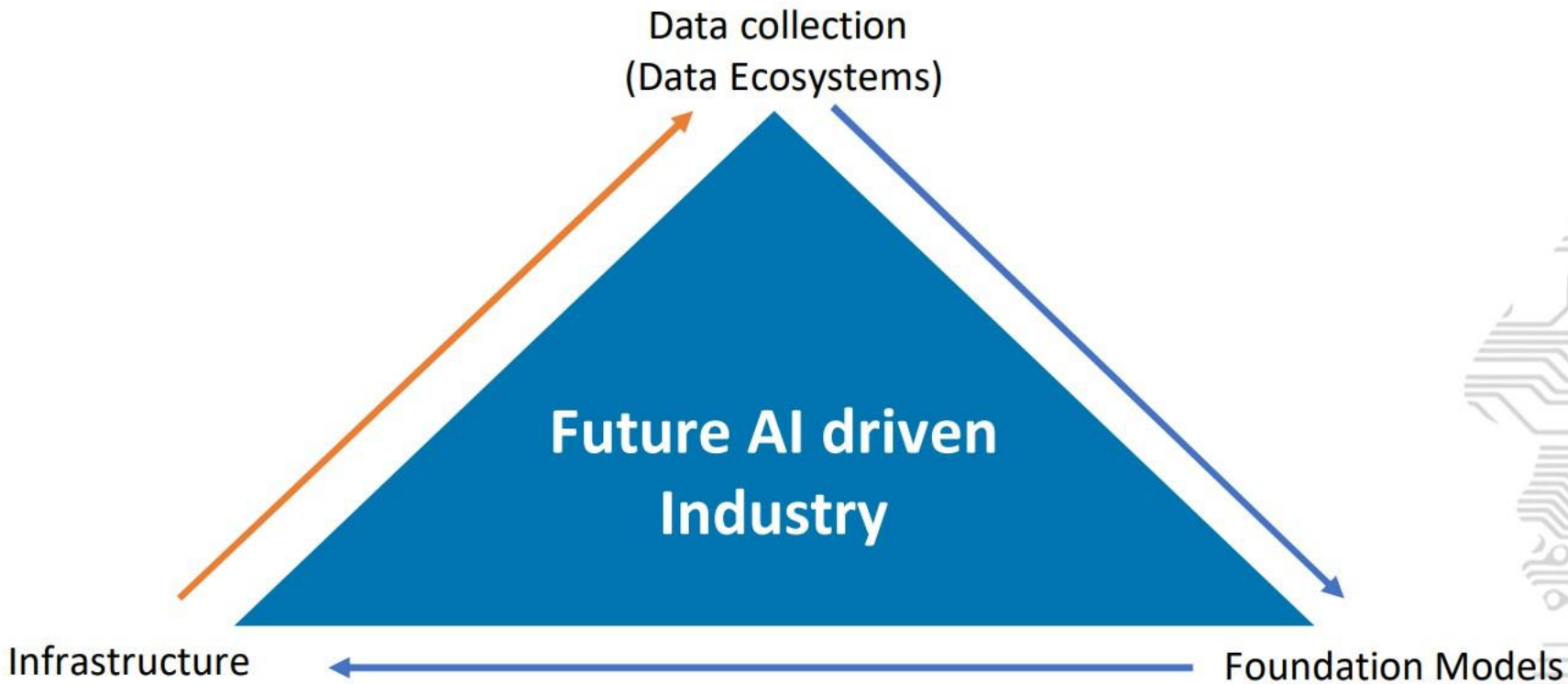
Industrial AI Components

Building blocks for sovereign AI for EU Industries



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Why we need to act!

- Europe needs to **increase the adoption of digital technologies**, notably AI, in its economy to improve its competitiveness, and to do so in a way that **strengthens its digital sovereinity and the resilience of its societies and infrastructure:**

1. Urgency to be ready for **future AI developments**.
2. Time to define next stage of **European AI sovereinigty**
3. **High fragmentation** and lack of state-of-the-art AI and cloud technologies in Europe.
4. **Lack of interoperability and scalability** of AI solutions.
5. Transfer into community driven **free and open-source** AI Ecosystem.
6. Ensure that European companies can **differentiate in markets.**

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Current status

- Identification in the Joint-European-Forum of 2 IPCEI candidates:
  1. IPCEI on a continuum of federated and distributed Artificial Intelligence services (IPCEI-AI)
  2. IPCEI on deploying a compute infrastructure continuum (IPCEI-CIC)
- Connection to the 8ra Initiative (IPCEI-CIS) is highly important
- 15 participating Member States: (Coordinator = DE) BE, DE, EE, ES, FI, FR, HR, HU, IE, IT, LT, NL, PL, RO, SV
- July 24: Conclusion of pre-design phase
- September 11: Kick-Off IPCEI-AI design phase
- September 17: Kick-Off IPCEI-CIC design phase

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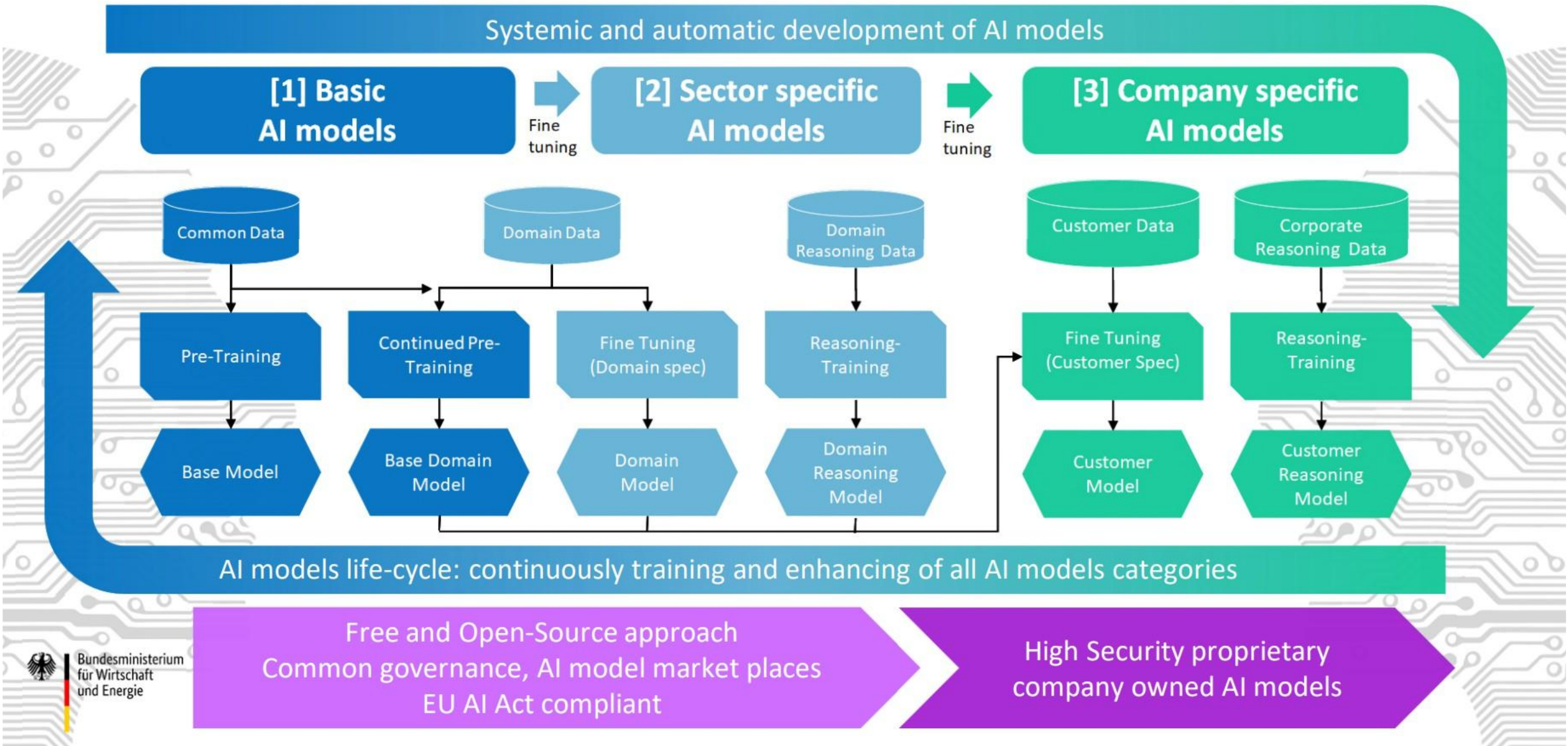
How to go beyond: Systemic approach to accelerate the development of AI models



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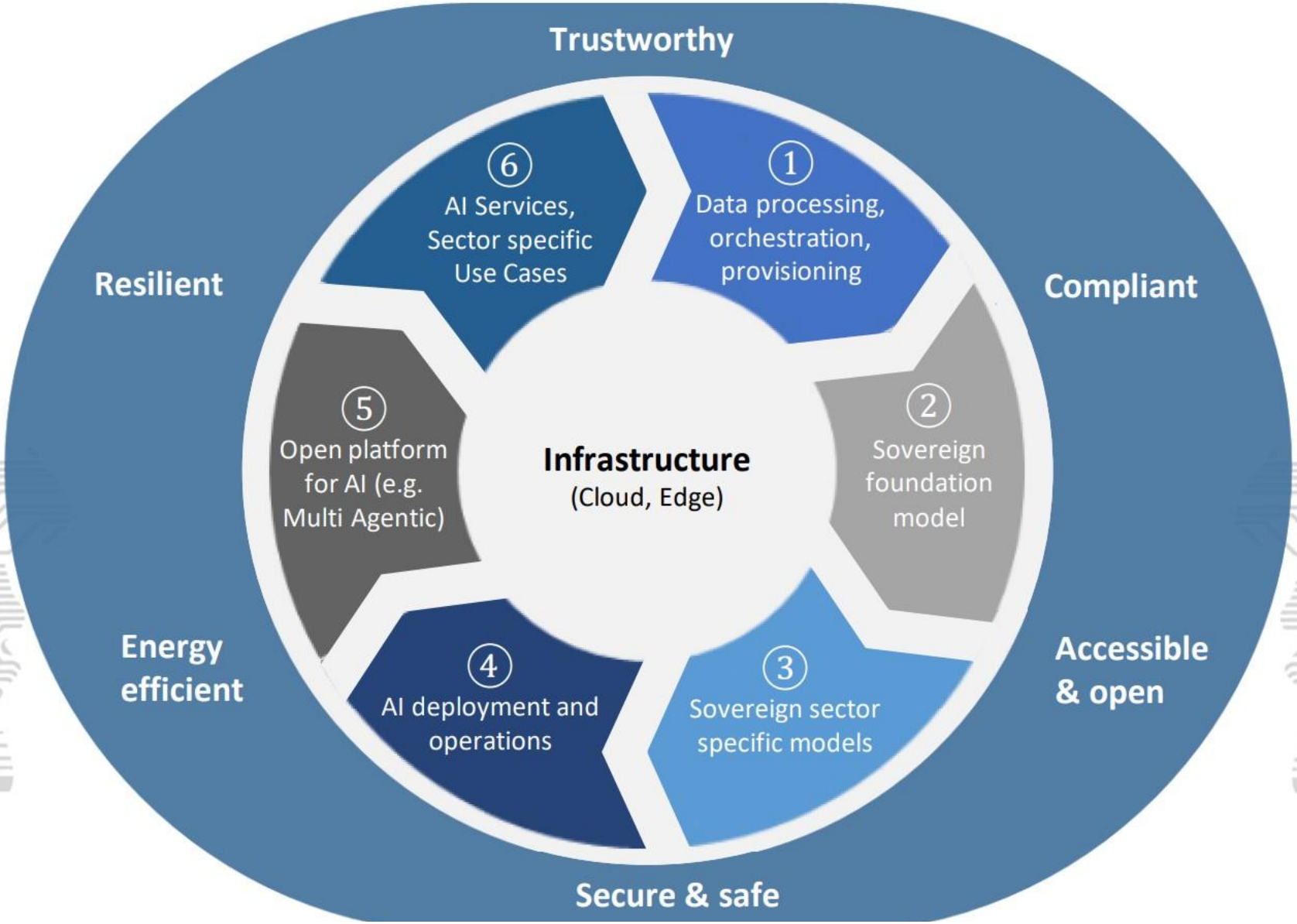
Scope & Objective IPCEI-AI

- Creation of a **Next Generation AI continuum** that includes:
  - Sovereign European cloud services and fundamental components for AI training and deployment (including resource management, computation distribution).
  - Next generation AI model training technologies and methods.
  - Open and competitive AI foundation models: New foundational, frontier models.
  - Innovative post-training techniques, such as inference, fine-tuning for specific sector offerings.
  - Energy efficient use of AI.
- **Development of strong open-source solutions and community**, that could be gathered in an open environment.
- Foster the **availability of and access to high quality and structured data**: Accessing large-scale, high-quality datasets, under European data privacy and security regulations.
- Foster the **development and adoption of AI-as-a-Service (AIaaS) tailored to the needs of AI developers and adopters**, enabling the broad use of AI models to address specific use cases across various sectors (energy, telco, defence, finance, aerospace, etc.).
- Promotion of **integration of AI models into sector specific systems and applications**, addressing economic use cases within enterprises and public administrations.

Overview of the IPCEI-AI Value-Chain components



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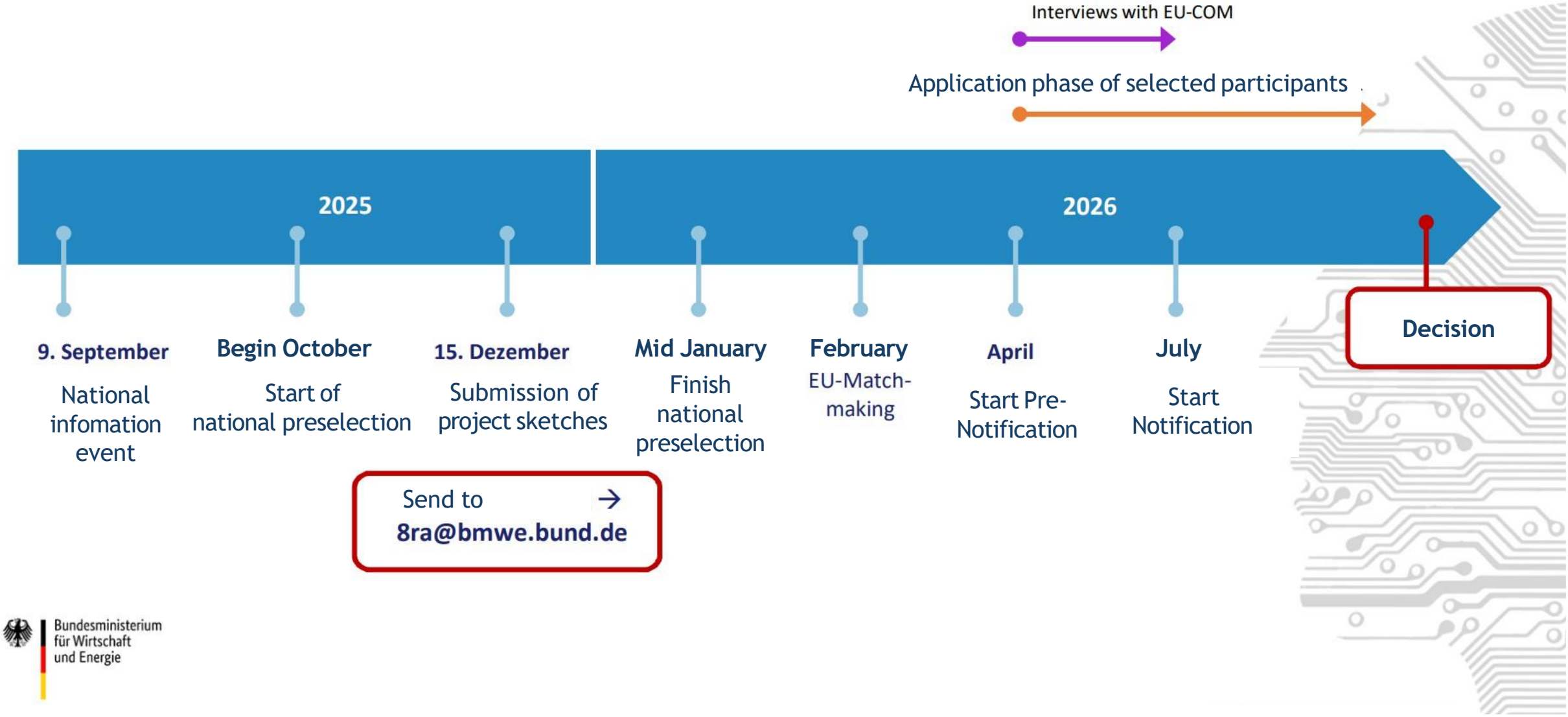
Annex: Sectoral Use-Cases to illustrate the feasibility for IPCEI-AI

No.	Sector	Illustrative Use Cases
1	Manufacturing	AI-optimisation and acceleration of product development
2	Automotive	AI powered autonomous driving and advanced driver assistance systems
3	Agrifood	Neural Operator-based Foundational Models for Weather Forecast
4	Healthcare	Smart Healthcare: AI for Predictive Medicine in Respect of Privacy
5	Telecommunications	AI for connectivity: automating and optimising network performance (AI for network)
6	Energy	Smart Energy: Resilience and AI for Reliable Distribution Networks
7	Public Administration	Foundational Models for optimising city traffic and tourism flow

Timeline IPCEI-AI until notification



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Scope & Objective IPCEI-CIC

- Creation of a **sovereign European AI-computing infrastructure**, provided by a **multi-providers architecture**.
- Offering **open access to European stakeholders to computational resources**, such as Edge-computing infrastructure, Cloud computing infrastructure, including processing units, for training of small and large AI models in Europe.
- Support the **deployment of cloud platforms** that allow multiple entries (from edge to cloud), **applying a continuum concept** for the purpose of the analysis, processing, storage and data generation capabilities.
- Enabling **ultra-fast, secure and reliable network connectivity services and infrastructures**.
- Facilitating interoperability by encouraging **common architectures**.

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Types of Infrastructures

- **Infrastructure components (Edge, Cloud) are needed for CIC**
  1) **Regional GPU clusters** (< 5.000 GPU´s) as satellites for AI Gigafactories, e.g. for data curation, synthetic data generation, AI training of smaller/specific models, AI model adaptation and AI model evaluation.
  2) **Integrated cloud edge infrastructures,** e.g. for latency critical applications.
  3) **Near-premise Cloud Infrastructure** for hybrid scenarios with integration of public and private cloud.
  4) **Connectivity for Edge cloud** as enabler for advanced application scenarios requiring high bandwidth, low latency, security, scalability, and seamless integration across edge and cloud.

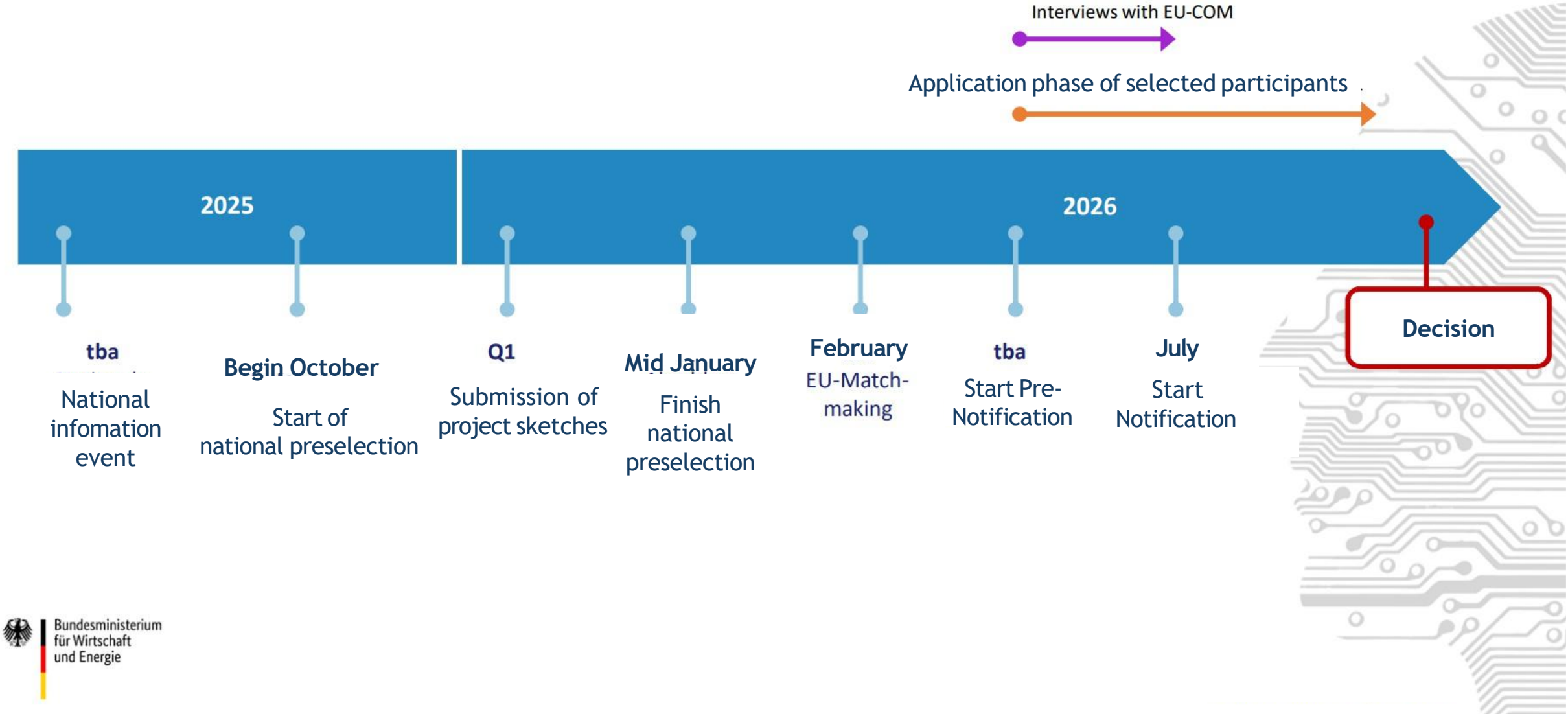
  - **Large HPC clusters** (>5.000 GPU´s) are supposed to be out of the CIC scope.

- **Classification of components**
  1) **Computing power, Power Usage** (GPU´s, MW): e.g. for AI Gigafactory satellites (including integration with HPC).
  2) **Latency requirements** (including connectivity requirements) for integrated cloud edge infrastructures (see EU Edge Computing Definition and Taxonomy).
  3) **Deployment Location** (Where it is Deployed): On-Prem Edge, Regional Edge, etc

Exemplary Application Scenarios

No.	Exemplary application scenarios
1	Near-premises infrastructure, operated by a Telco Edge Provider
2	Satellites for AI-Factories or AI-Gigafactories
3	Autonomous driving and advanced driver assistance systems
4	Privacy-Preserving and Governable Multi-Tier Execution

Timeline IPCEI-CIC until notification



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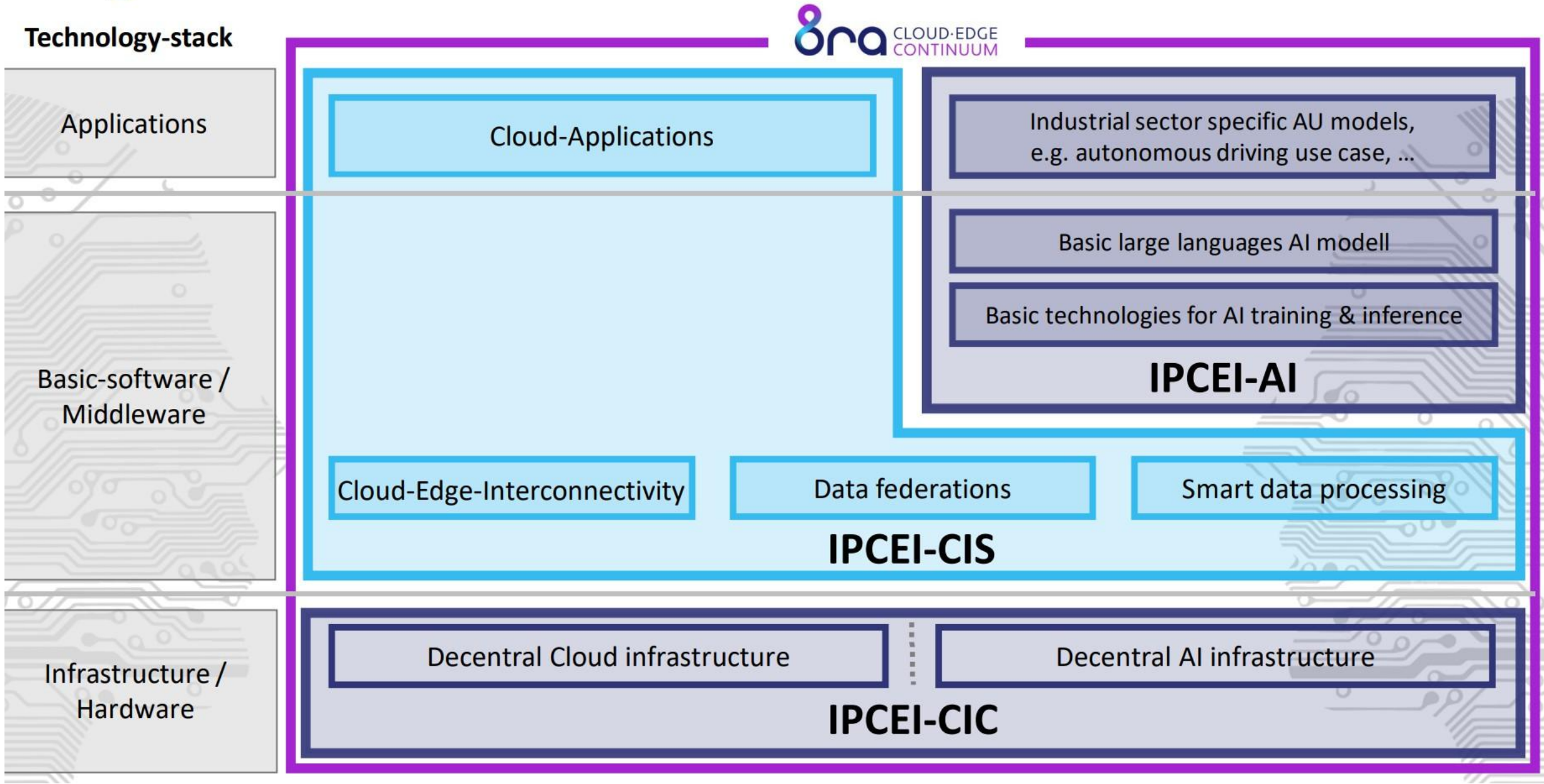
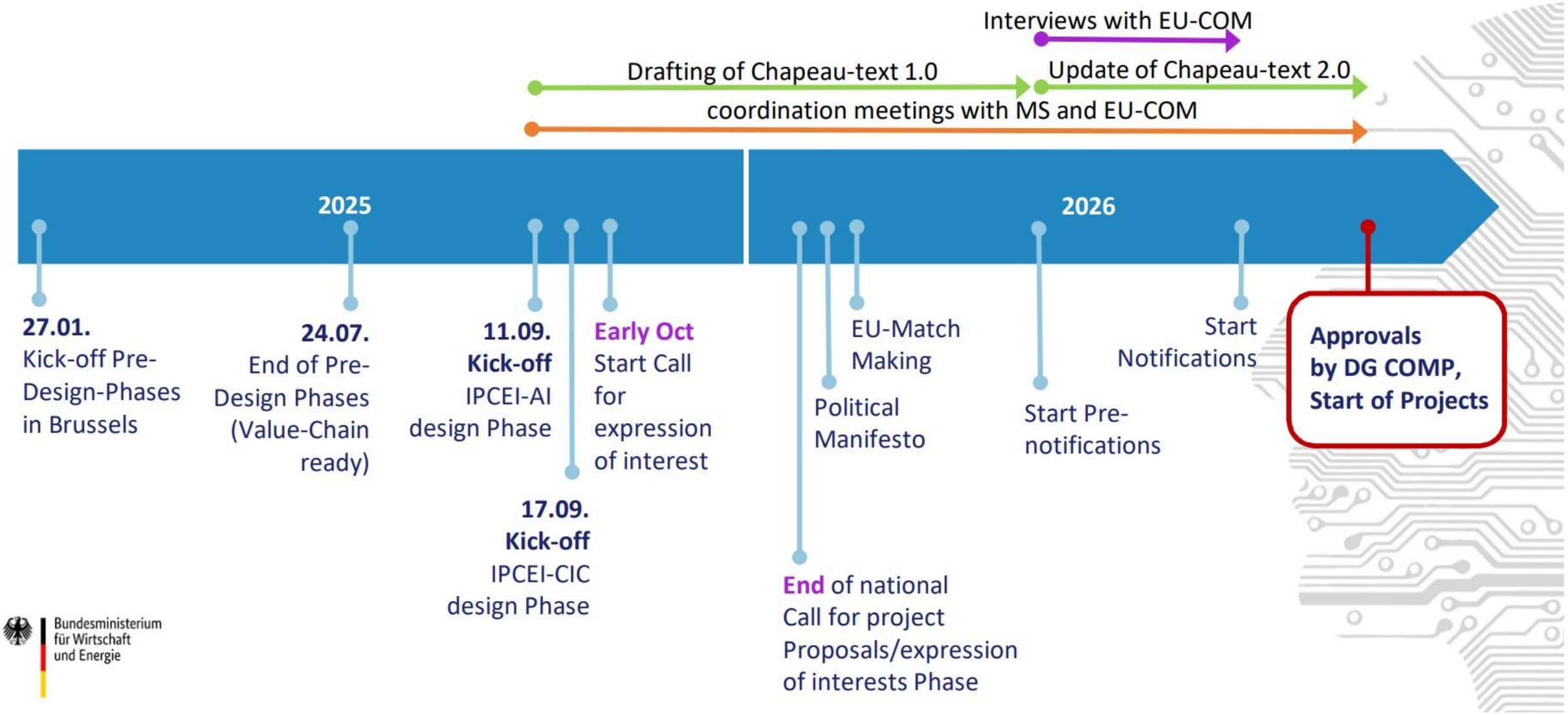
Integration in die 8ra-Initiative



Timeline EU milestones IPCEI-AI



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