Opportunities and challenges for NMCAs in an ever-changing technical landscape

Technology working with us or against us – AI and Future trends

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What is this presentation about?
Innovative production of geospatial data

European Commission

New technologies
At our disposal

Data capture

- **Small satellites, Unmanned Aerial Vehicles (UAVs), Drones, LIDAR & photogrammetry**

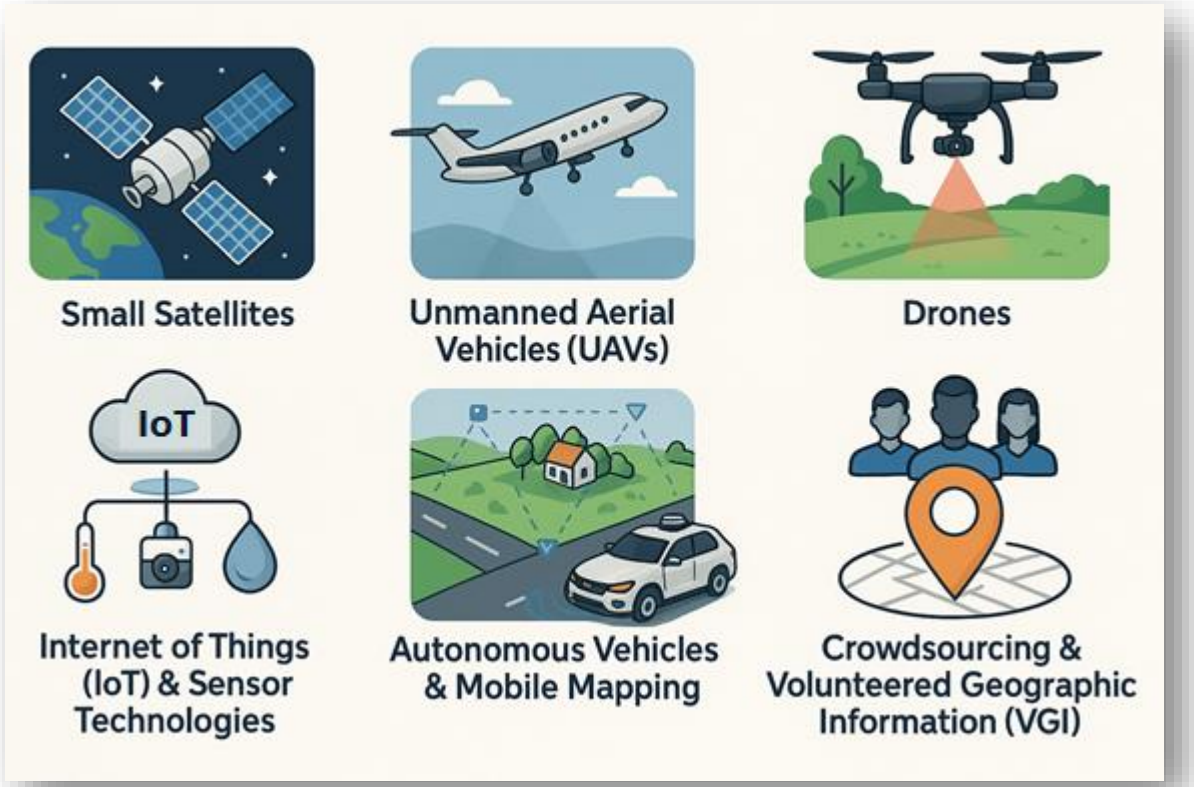
  More frequent, high-resolution aerial & terrestrial imagery, orthophotos, accurate 3D models.

- **Autonomous Vehicles & Mobile Mapping**

  Collect geospatial data, such as road networks, traffic patterns & infrastructure conditions.

- **Internet of Things (IoT) & Sensor Technologies**

  Real-time data (environment, traffic…) enabling more accurate & dynamic mapping.



- **Crowdsourcing & Volunteered Geographic Information (VGI)**

  Engaging citizens in providing valuable contributions to geospatial data & services.

New technologies
At our disposal

Data production, processing & sharing

- **Open-Source Geospatial Software & Standards**

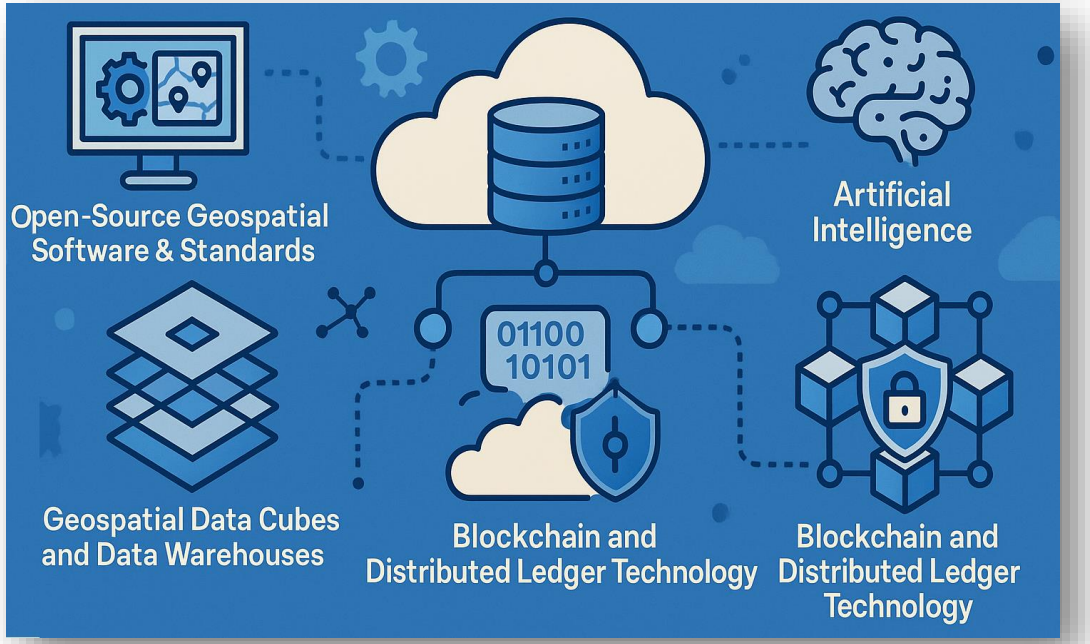
  Facilitate processing, collaboration & knowledge transfer. Boost innovation & interoperability.

- **Artificial Intelligence (prominent role)**

  Image classification, object detection, feature extraction & mapping. Data validation and quality control. Predictive analytics & modelling. Data harmonisation.

- **Cloud Computing & Big Data Analytics**

  Handle large volumes of geospatial data, enabling faster processing, storage & dissemination.



- **Geospatial Data Cubes & Data Warehouses**

  Centralized platforms for storing, managing & analyzing large volumes of geospatial data.

- **Blockchain and Distributed Ledger Tech.**

  Secure management land ownership / cadastral data, ensuring transparency, immutability & trust.

New technologies
At our disposal

Data production, processing & sharing

- Decentralized, federated data infrastructure enabling secure and standardized data sharing across organizations.
- Reducing silos, enhancing decision-making.
- Ensuring data sovereignty and security.

https://europa.eu/!jBGmyK

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New technologies
At our disposal

Data exploitation & Services

- **Virtual & Augmented Reality (VR/AR)**

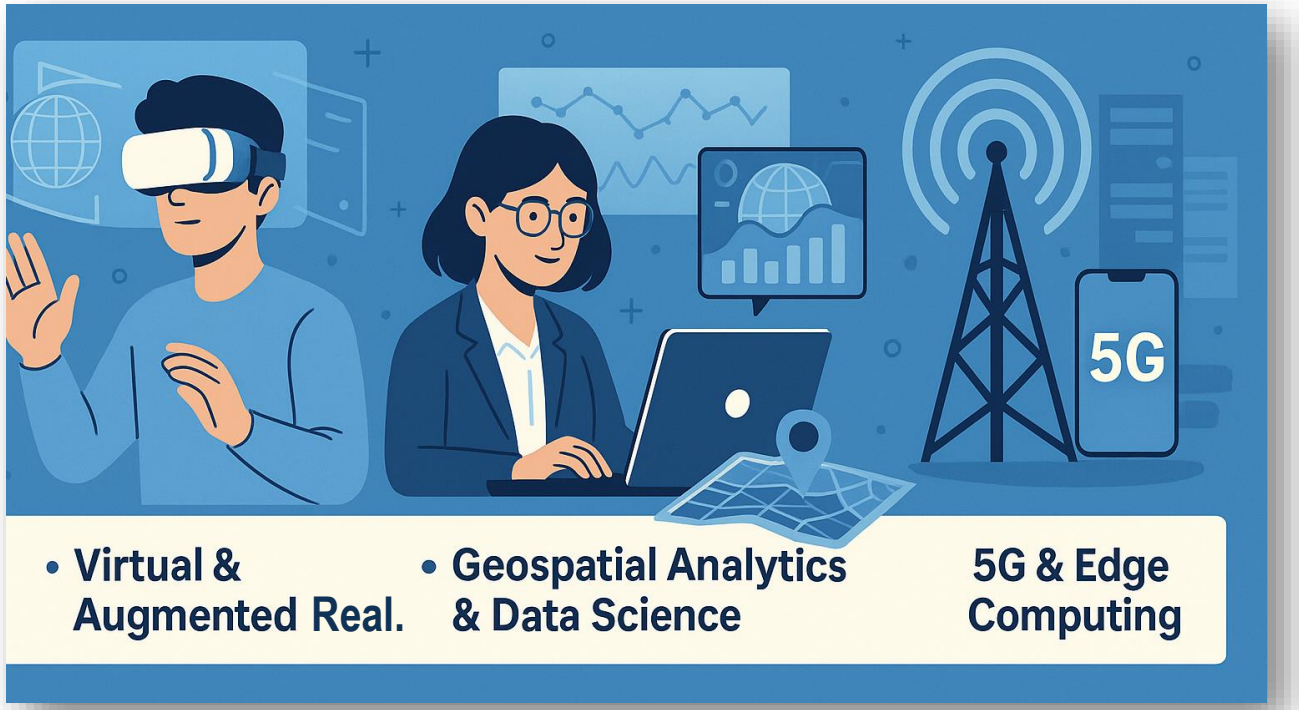
  Create immersive & interactive experiences for geospatial data visualization, enabling better understanding & decision-making.

- **Geospatial Analytics & Data Science**

  Extract insights, identify patterns, & predict trends in geospatial data, supporting informed decision-making.

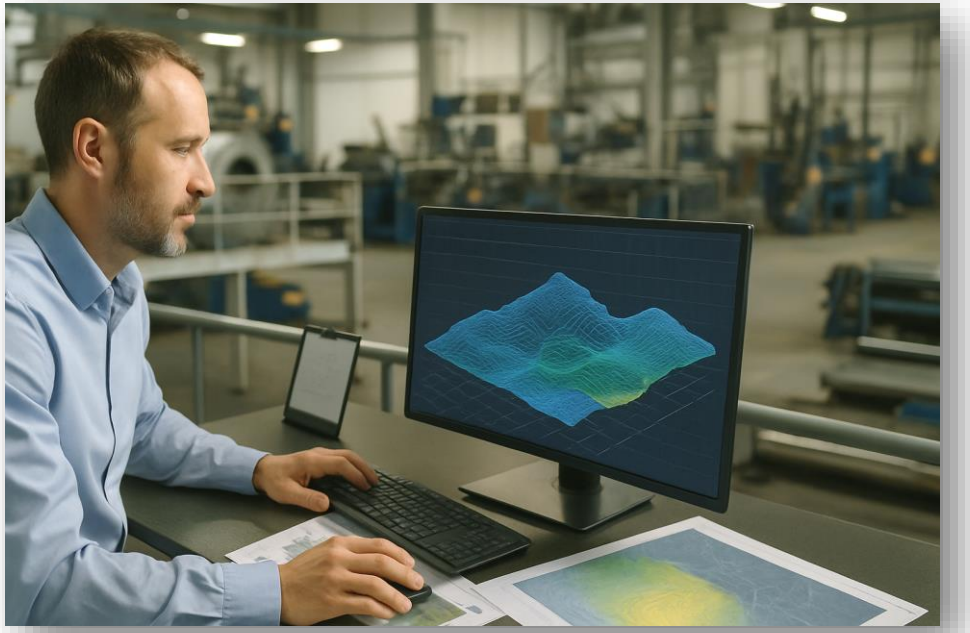
- **5G & Edge Computing**

  Enable faster & more reliable data transmission, processing & analysis, supporting real-time geospatial applications.



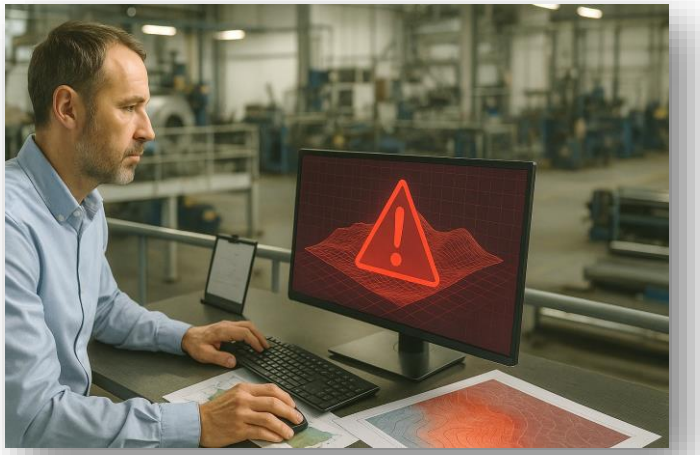
New technologies
Opportunities for NMCAs

- Vast amount of technologies at our disposal. Flexibility and modularity.
- New business models & Potential revenues.
- Enhanced management & More efficient production processes.
- Better decision-making & Policy support.



- When technologies are properly applied:
  - Improved data management.
  - Enabling (near) real-time data updates.
  - Increased automation.
  - Efficiency and resource savings.
  - Reduced time-to-market.
  - Enhanced user engagement.

New technologies
Challenges and risks for NMCAs



- Lack of investments - Budget constraints vs. adaptation.
- Data management & Governance challenges - Effective data management and governance practices to ensure data is properly collected, stored & used.
- Data quality & Integrity issues - Ensuring accuracy, completeness, and consistency of spatial data (e.g. integrating data from multiple sources, applying automatic processes).
- Liability and accountability concerns - Agencies may be held liable for errors or inaccuracies in spatial data, or for failing to protect sensitive data.
- Scalability & Interoperability issues - Ensuring that systems and data can scale to meet growing demands and are compatible with other systems and data sources.
- Data security / Privacy concerns / Cybersecurity threats - Protect geospatial data and services, ensuring the integrity, trustworthiness and privacy of geospatial information.
- Skills & training gaps - Vast amount of knowledge to digest, control and apply.
- Change management - Resistance to change and / or cultural challenges when adopting new technologies and workflows.

European Commission
Political Priorities 2024-2029

[A new plan for Europe's sustainable prosperity and competitiveness]

[A new era for European defence and security]

[Supporting people, strengthening our societies and our social model]

https://commission.europa.eu/priorities-2024-2029_en

[Sustaining our quality of life: Food security, water and nature]

[Protecting our democracy, upholding our values]

[A global Europe: Leveraging our power and partnerships]

[Delivering together and preparing our Union for the future]

European Commission
Political Priorities 2024-2029

A new plan for Europe's sustainable prosperity and competitiveness

Boost productivity with digital tech diffusion

- Encourage investments in digital infrastructures to improve access to secure, fast and reliable connectivity.
- Continue to step up our enforcement of the EU digital laws.
- Step up investment in supercomputing, semiconductors, the Internet of Things, genomics, quantum computing, and space tech.
- Ensure access to supercomputing capacity for AI startups and industry via an AI continent action plan.
- Boost new industrial uses of AI and improve public services with an apply AI strategy.
- Ensure seamless and at-scale data sharing with a European Data Union Strategy.

Put research and innovation at the heart of our economy

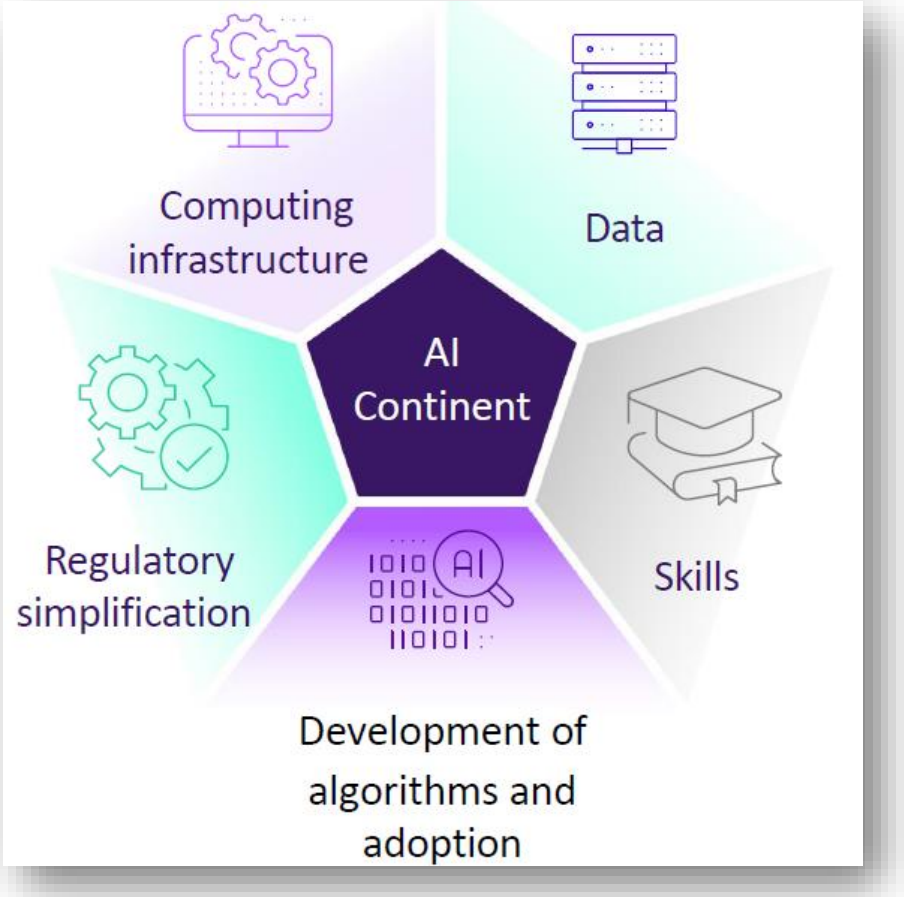
- Increase research spending to focus more on strategic priorities.
- Support green and digital transitions and develop high-value technologies through a strategy for European life sciences.

European Commission
Political Priorities 2024-2029

AI Continent Action Plan - Making Europe a Global AI Leader

Roadmap to position Europe as a global frontrunner in artificial intelligence.

- Expanding AI infrastructure: creation of "AI Factories" and "AI Gigafactories" equipped with state-of-the-art computing resources.
- Launching the Data Union Strategy to ensure access to high-quality data for AI development.
- Driving AI adoption in both industry and the public sector through the Apply AI Strategy (practical use of AI solutions).
- Strengthening AI skills with new training programmes and the establishment of an AI Skills Academy.
- Simplifying regulations and supporting businesses with tools like the AI Act Service Desk.



European Commission
Political Priorities 2024-2029

European Data Union Strategy - Unlocking the Power of Data

Ensuring access to high-quality data.

Goals

- Break down barriers to cross-border data use.
- Streamline data rules, and create a coherent legal and technical framework that enables innovation.
- Ensuring data sovereignty and protection for individuals and businesses.
- Reduce unnecessary bureaucracy.
- Build on the earlier European Data Strategy (2020): https://europa.eu/!4HfX6Q

Actions

- Data Labs within the AI Factories:
  - Integrate & organise data from different sources for AI developers.
  - Link to Common European Data Spaces.
  - Provide data-related services (e.g., cleaning and enriching datasets)
- Development of a shared cloud software.
- Repository of high-quality language resources: Alliance for Language Technologies (ALT-EDIC).

Make Europe and AI continent
Building capacity and competence

BODY	EDIH (EUROPEAN DIGITAL INNOVATION HUB)	EDIC (EUROPEAN DIGITAL INFRASTRUCTURE CONSORTIUM)
Purpose	Supports digital transformation of companies and public sector at regional level	Implements large-scale, multi-country digital infrastructure projects
Legal Status	Independent entity or consortium, often non-profit	Legal entity established by European Commission decision; governed by statutes of members
Main Activities	Provides digital expertise, "test before invest," training, innovation services, and networking	Deploys and operates joint digital infrastructure, delivers services at European scale
Funding	50% EU (Digital Europe Programme), 50% national/regional/private sources	Member States' contributions, possibly complemented by EU/national grants and other sources
Governance	Local/regional, often with strong involvement of local authorities and stakeholders	Member States hold majority of votes and control governance; statutes define internal rules
Target Users	SMEs, mid-caps, startups, public sector organizations, especially at local/regional level	Member States, public/private entities, end users, industry (as defined by founding members)
Scale	Regional with pan-European network for knowledge exchange	Pan-European, focused on cross-border infrastructure and services

Digital Europe Programme
New Work Programme 2025-2027

EU Digital & Tech
54.601 seguidores
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The future of key technologies in Europe is now.

The new work programme for 2025-2027 of the Digital Europe Programme was just adopted and it is set to fund critical digital technologies, key in boosting AI innovation in Europe and contributing to EU tech sovereignty and competitiveness.

With €1.3 billion, the programme will focus on:

☑ Making Europe an AI continent, thriving on the development, integration and adoption of AI.
☑ Supporting the European Digital Innovation Hubs (EDIHs) as a means for the large-scale deployment of AI via the support of private and public organisations across Europe.
☑ The development of the Destination Earth initiative that will build a digital twin of Earth to support climate adaptation and disaster risk management.
☑ Facilitating the new EU Digital Identity Wallet architecture and its European Trust Infrastructure
☑ Boosting cyber resilience, developing EU education and training institutions capacity in digital & much more!

Check out the press release to find out more: https://europa.eu/!cGh9kv
#DigitalEUProgramme #AIinEurope #DigitalEU

Key takeaways
Sneak peek for discussion

Find new ways of doing our work better.

- Investments
  - Innovation is required more than ever.
  - Apply for EU funding.
  - Resistance to adapt production process may lead to obsolescence and decreased competitiveness.
- Production systems
  - Boost its Digitalization & Technical update.
  - Ensure Scalability & Interoperability.
  - Embrace AI to ensure competitiveness.
- Data quality / Knowledge management
  - Ad-hoc data quality procedures are essential.
  - Keep compliance with regulations and standards, public trust and confidence.
  - Understanding and applying new technologies demands capacity building.
  - Public-private partnerships may bring substantial gains vs. Dependency on third-party vendors.
- Implementing approach
  - Find the right balance. Implement what is key.
  - Quick-wins. Avoid getting lost in complexity.

Are new technologies good or bad? – It depends on the quality of our management.

Thank you

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