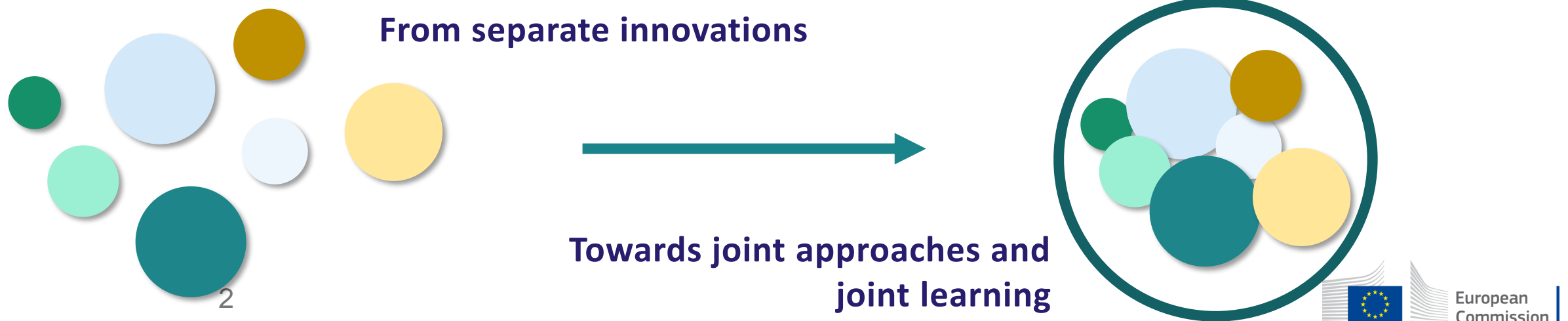# ESS innovation

Innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (or brought into use by the unit).

HLG MOS workshop

Jean-Marc Museux
Chief Enterprise Architect
- Eurostat Unit A.5
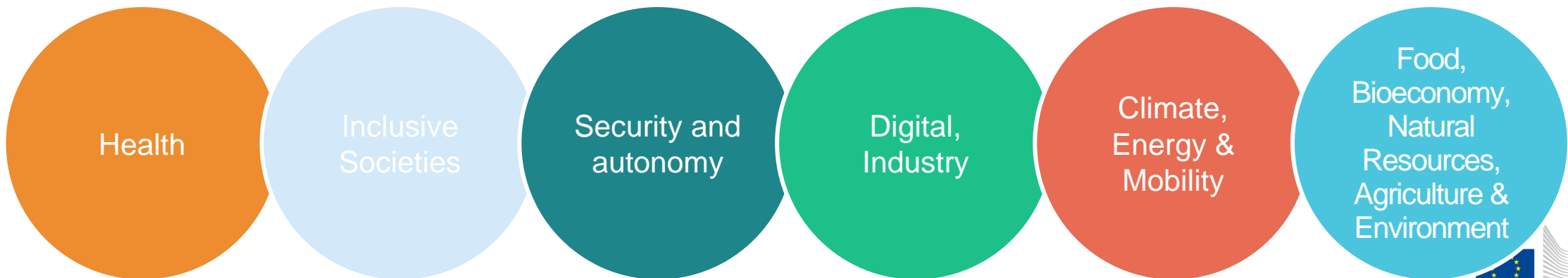*jean-marc.museux @ec.europa.eu*

Why an ESS Innovation Agenda?

- ESSC **acknowledgment** of the importance of innovation and the necessity to make it an indispensable element of the ESS activities
- Joint **vision and approach scaling u**p innovation and **strengthening** the innovation culture
- Taking **innovation in the ESS** to the next level

From separate innovations

Towards joint approaches and joint learning

Policy Context

- The **ESS Vision 2020 Programme** ended in 2020 delivering a wide range of results
- The recent crisis has proved that **innovation is more important than ever** in a rapidly changing data ecosystem and to respond to new user needs
- A broad consensus on the need to keep a focus on **ESS innovation as part of the Multi Annual Plan** with a broad scope (product and process innovation)
- New measures and new indicator demands …

Health

Inclusive Societies

Security and autonomy

Digital, Industry

Climate, Energy & Mobility

Food, Bioeconomy, Natural Resources, Agriculture & Environment

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ESS Innovation Agenda Goal

'the ESS innovation agenda is meant to structure and sustain the innovation streams in the ESS in order to make the production of European official statistics fit for the future and the ESS in better condition to respond to the challenges ahead'

Goals

⭐ **Strengthen the ESS ability to respond rapidly to new and urgent user needs**

⭐ **Augment products and service portfolio for meeting policy needs**

⭐ **Realize efficiency gains to free up resources**

⭐ **Strengthen resilience to shocks and adapt to societal change**

Means

🔧 Leverage key innovation **drivers and enablers**, offered by the recent technological developments

🔧 Promote internal and external **cooperation**

🔧 '**Cross-domain**' thinking and working

🔧 Focus on implementing in statistical process

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ESS innovation agenda

Strategic approach to innovation

- Conducting innovative projects
- Accelerating and enabling innovation
- Reaching out to a larger community of stakeholders active in innovation activities
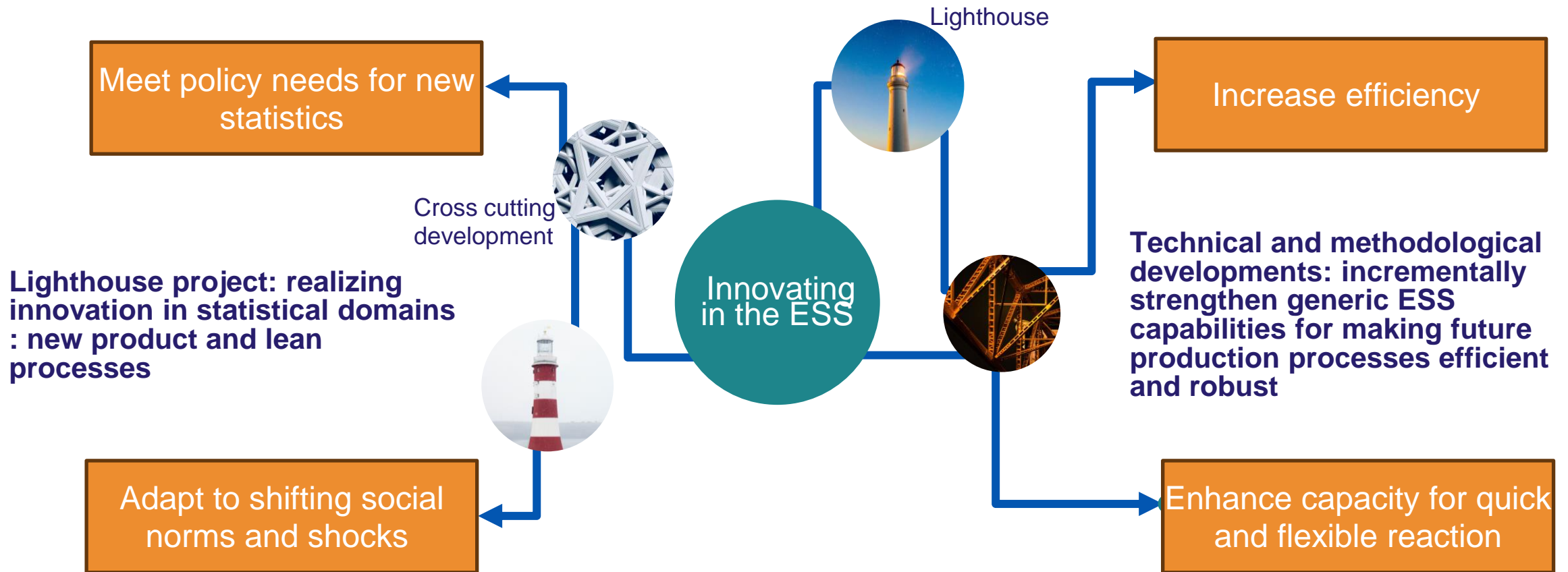
Operational action plan

- Annual rolling plan combining integrating various approaches (quick wins and longer term capacity building)

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ESS Innovation agenda: Principles

- Guiding principles for rolling out the ESS Innovation agenda
  - User information **needs** are the key innovation driver
  - Innovation encompasses the **entire ESS**
  - Innovation needs a '**fail fast**' approach
  - Innovation results are **integrated** in the statistical **production**
  - Participation by an ESS member in the innovation is **voluntary**
  - The **optimal role** distribution between ESS members is established

Rolling out innovation

Lighthouse

Meet policy needs for new statistics

Increase efficiency

Cross cutting development

Innovating in the ESS

Lighthouse project: realizing innovation in statistical domains : new product and lean processes

Technical and methodological developments: incrementally strengthen generic ESS capabilities for making future production processes efficient and robust

Adapt to shifting social norms and shocks

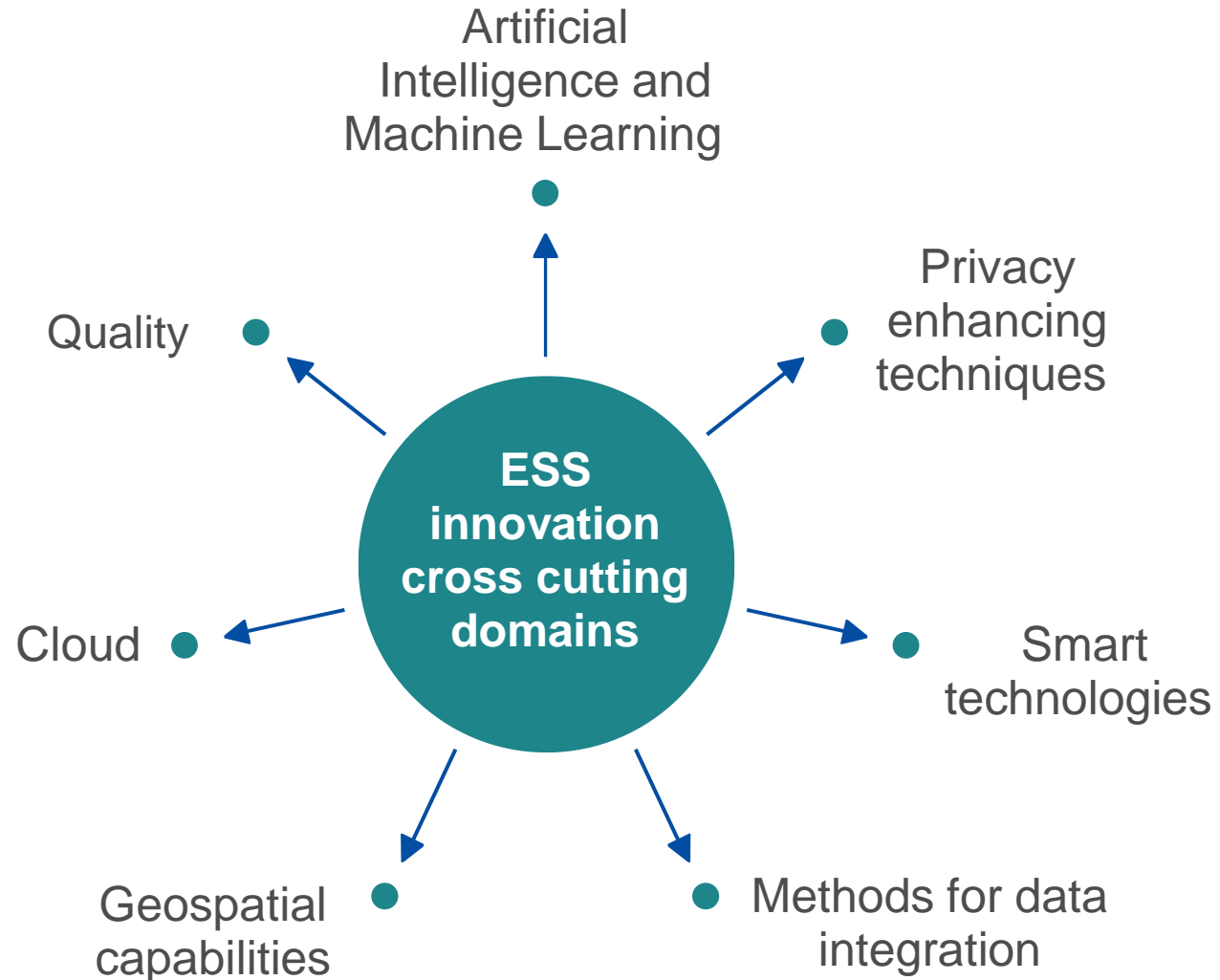Enhance capacity for quick and flexible reaction

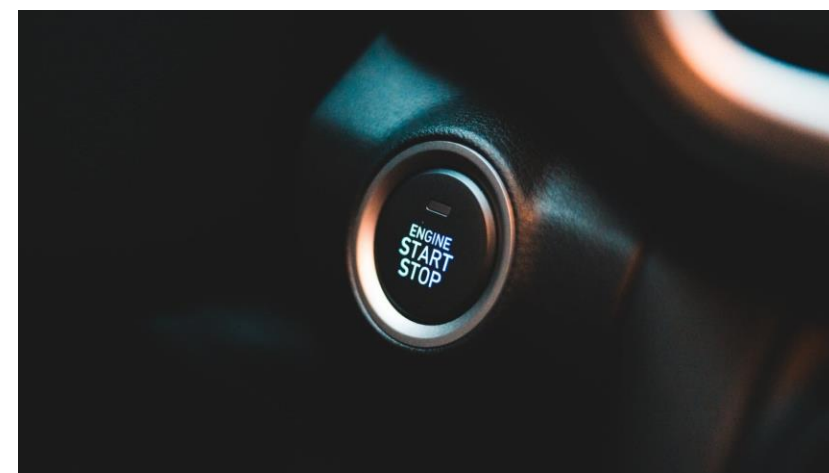European Commission

Lighthouse projects examples

1. **Innovative dissemination** tools for Principal European Economic Indicators

2. From experimental statistics to a statistical process: **Distributional National Accounts**

3. Working towards **early estimates** for short-term business indicators

4. **Microdata linking** techniques (MDL) for improved efficiency and new business statistics

5. Implementing measures for **improved European social statistics**

6. New wave of **Household Budget Survey**

7. Development of **environmental ecosystem accounting**.

8. Use of **Automated Identification Systems of vessels** data for improved maritime statistics

9. ML for **automatic classifying** entities according to NACE

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Methodological and Technological innovations

TOP priorities

Artificial Intelligence and Machine Learning

Privacy enhancing techniques

Quality

ESS innovation cross cutting domains

Cloud

Smart technologies

Geospatial capabilities

Methods for data integration

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AI/ML One-Stop-Shop for NSIs

A single-entry point for NSIs staff

- Sandbox infrastructure to test and pilot AI/ML approaches together with training and coaching
- Reference implementation of AI approaches in the production of official statistics (e.g. information extraction, data editing and imputation, automatic coding, use of LLM to support users of statistics)
- Communities to share ideas, experiences, success stories and lessons learned to stimulate innovation
  based on the use of AI/ML.
- Best practices to facilitate the transition from development and experimentation of AI/ML-based solutions to industrialisation and production
- Time horizon: 2024-2028

Implementing Smart Surveys

- Applied research (NSIs, universities) to advance, develop and demonstrate the concept of smart surveys i.e., use of smart devices combining active and interactive data collection
- Identify the sharable components of the solutions that could be further developed and used among the NSIs
- Identify and promote good practices for privacy and communication methods for engaging respondents.
- Time horizon (2023-25)
- Twinning with HBS modernisation

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Privacy Enhancing Techniques

- Accelerating the adoption of Privacy Enhancing Technologies (PET) with the ESS as an alternative to direct exchange of personal data between different organisations, lowering privacy and security risks, improving acceptance by data providers and general public.
- Build a shared PET infrastructure based on the concept of Multi-Party Secure Private Computing-as-a-Service (MPSPCaaS).
- Detailed specification, feasibility analysis, prototyping and demonstration (2025-26) - IT procurement and piloting (2026 onwards)

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Innovation mechanisms

CULTURE

Economies of scale

Legal Framework

Sharing sources

Funding

Partnership & Alliances

Peer to peer knowledge sharing

Capacity building

Tools / platform

Collab places

LEADERSHIP

ESS enablers

TOP Priorities

1. Peer-to-peer knowledge sharing
2. Capacity building through training and similar activities
3. Process design and framework
4. Communication
5. Legal Framework
6. Citizen engagement and citizen science approaches

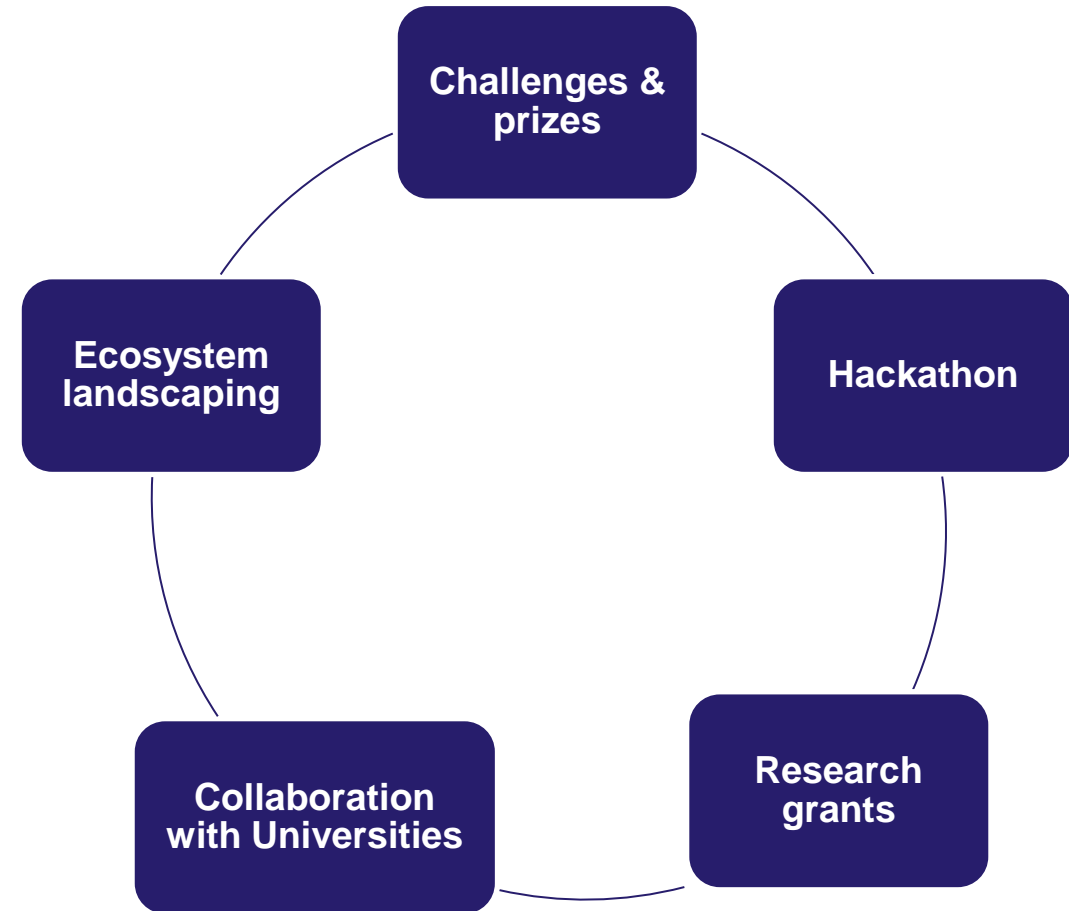European Commission

Partnerships – reinforced of collaboration

Academics

International organisations

Citizens' Engagement

Private sector

- Challenges & prizes
- Hackathon
- Research grants
- Collaboration with Universities
- Ecosystem landscaping

ESS Innovation Network (EIN)

Brings together ESS innovation champions to support the Innovation execution

Tasks of the EIN include:

Liaison with member states to learn from experiences and good practices

Boost innovation process (new ideas, reuse of capabilities, transition from LAB to FAB)

Initiator of contact with member states, EU organization
and external partners

Projects look beyond statistical offices and also enable collaboration
with **external partners / innovation community**

16

ESS innovation and HLG MOS

Key principles

Sharing knowledge
Combining perspectives leads to more innovative solutions

Collaborate on deployment of existing assets
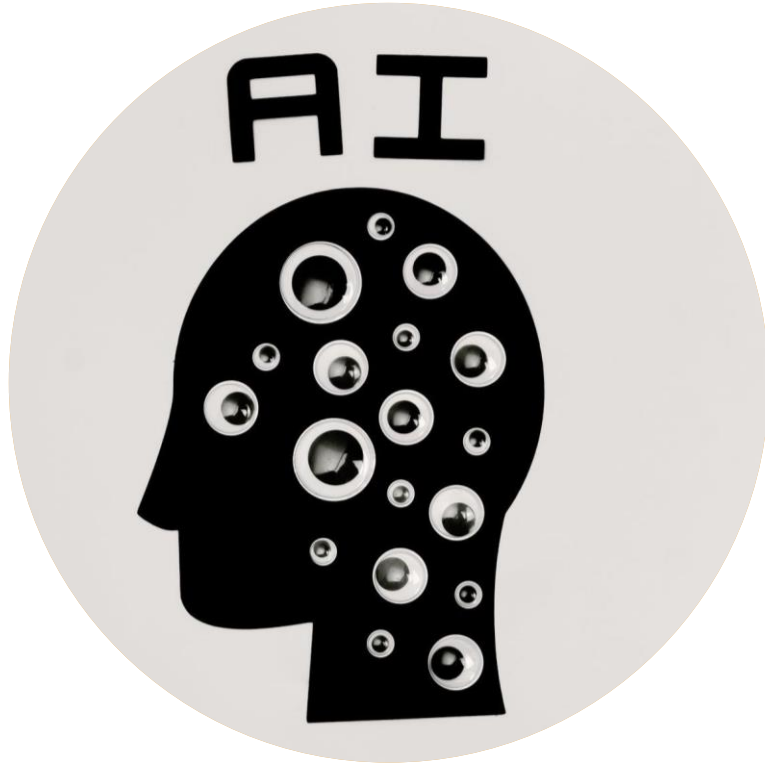Do not reinvent the wheel

Avoid duplication and seek complementarity
Dividing tasks increase speeds

Two ways communication

Maintain links between ESS innovation and HLG

Identified Areas of Collaboration

AI - ML

AI/ML One Stop Shop - HLG AI network

Privacy Enhancing Techniques

ESS PETaaS and UN Task Team on PETs

Training and skills

Meta Academie and European Statistical Programme / EMOS

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Next Milestones

Communication

Raising awareness

Changing culture

ESS Innovation HUB platform

Upgrade Collaboration on Research and Methodology for OS

Beginning 2024

Innovation workshop with Joint Research Centre
28 February 2024

EIN Plenary meeting
29 February 2024

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Thank you

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