Management Board meeting

16 December 2021

Human-centric Artificial Intelligence in regulatory science

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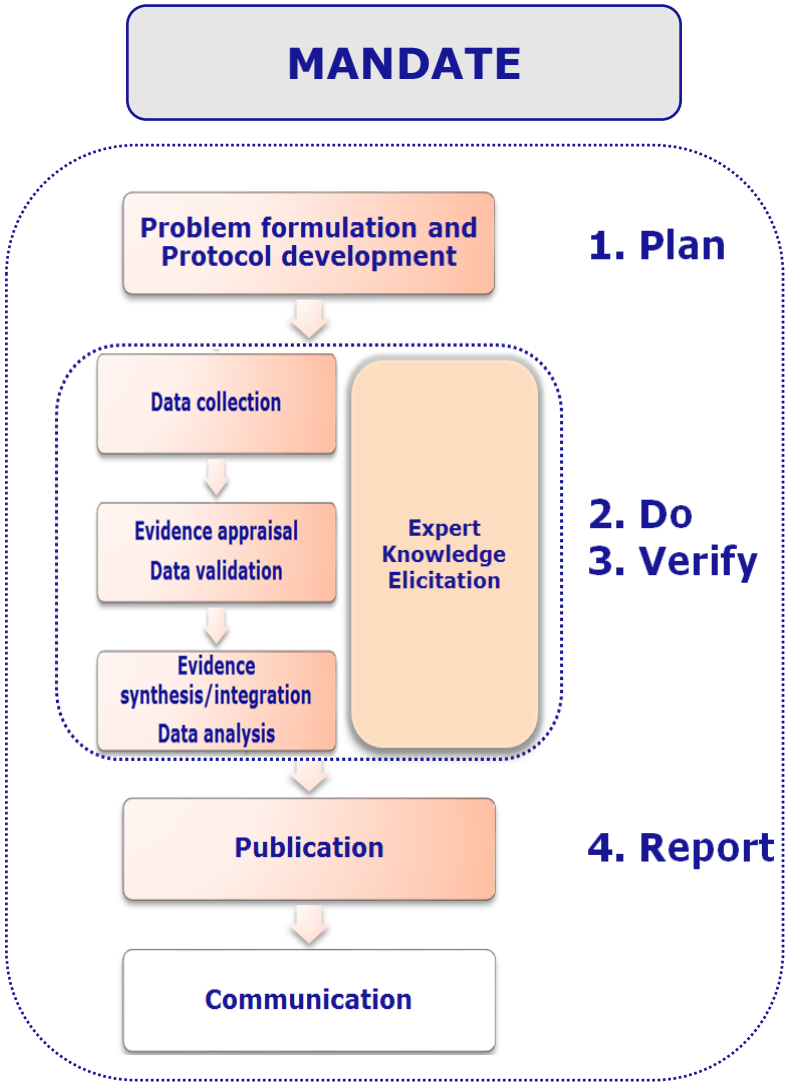
Trusted science for safe food

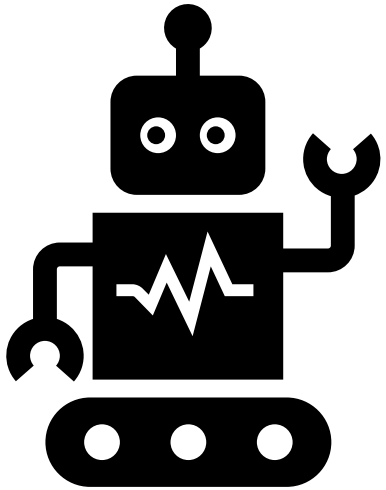
efsa

European Food Safety Authority

REGULATORY SCIENCE: THE RISK ASSESSMENT PROCESS



Business cases

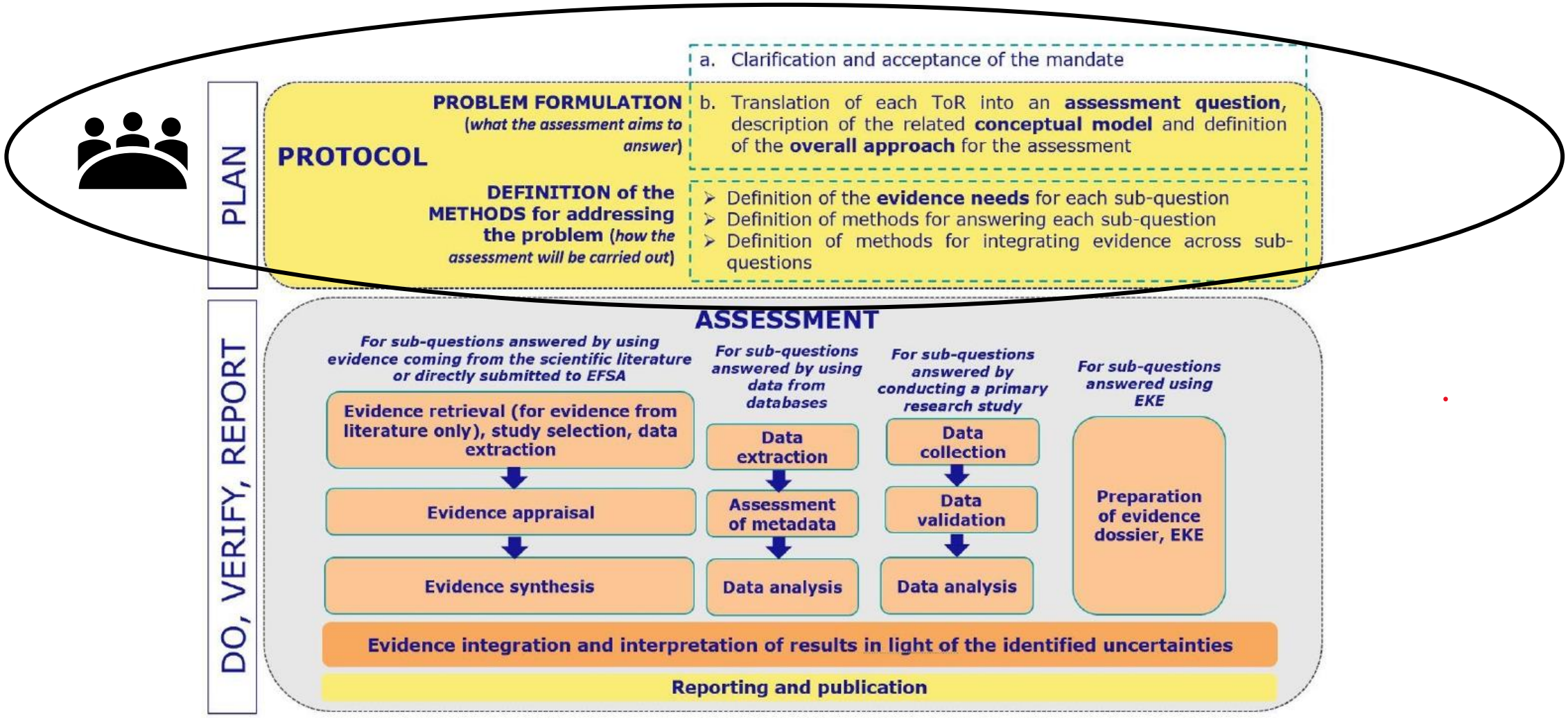


Think big

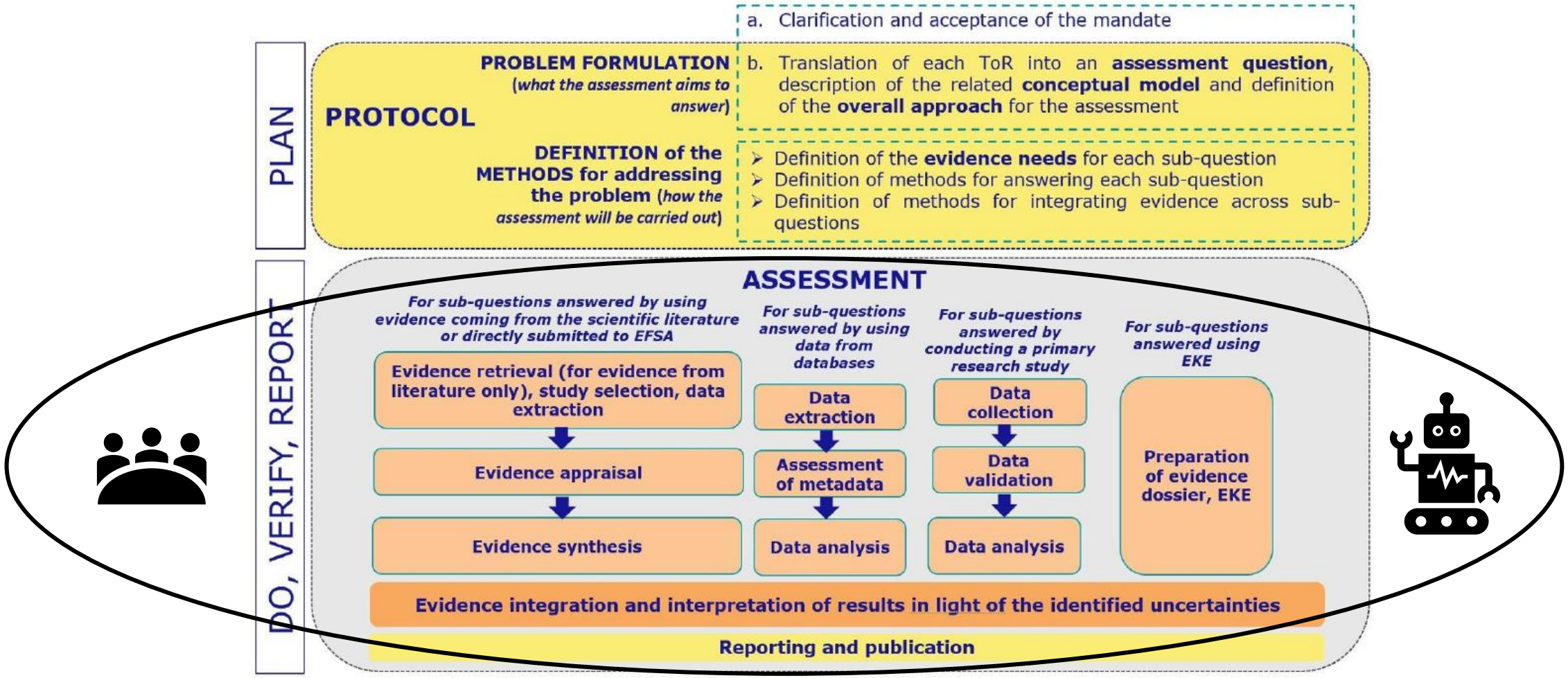
Start small

Little parts of the process that can be automated using AI/ML

The RA process: PLAN

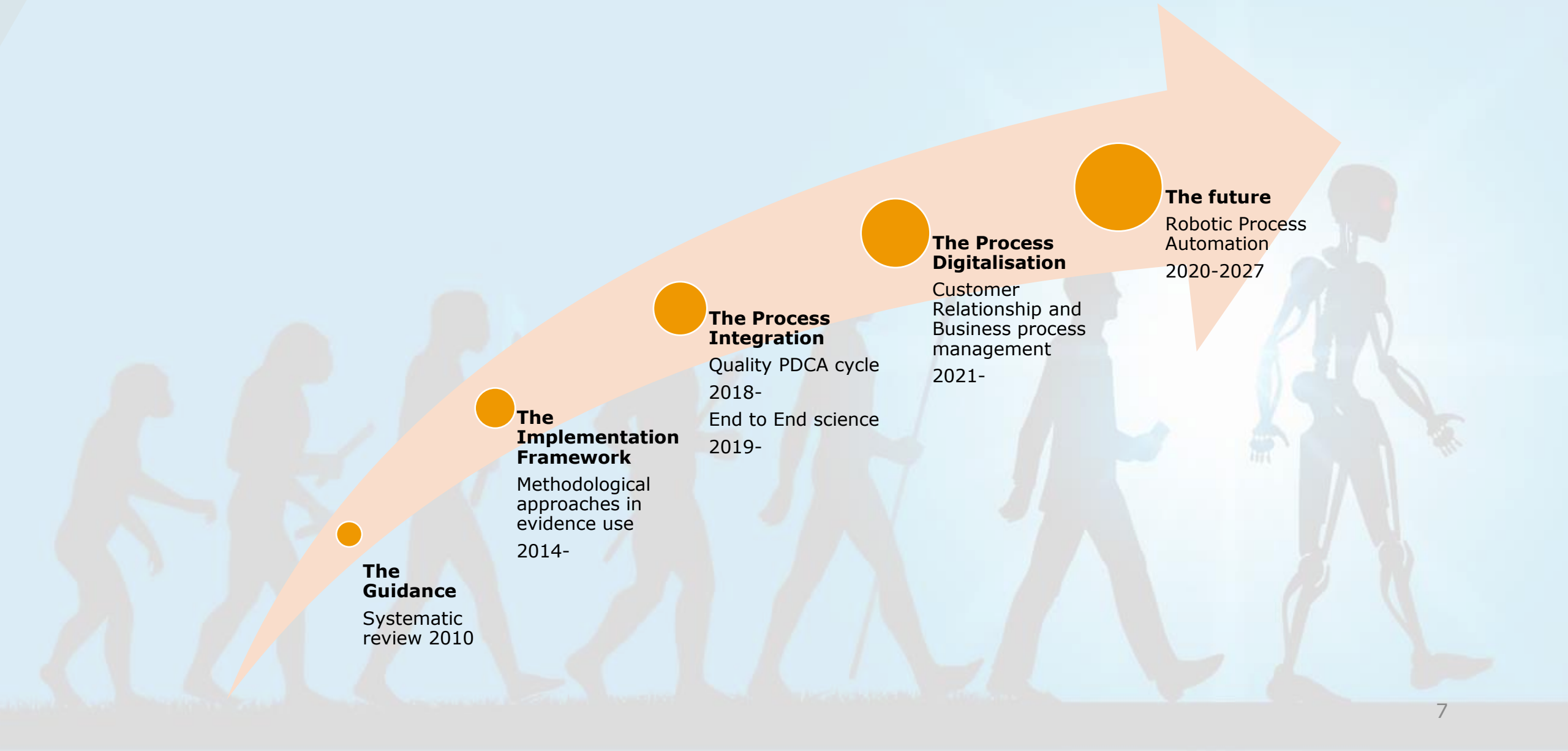


The RA process: DO



The evolution of Systematic Review

The evolution



Activities in Systematic Reviews

- Question Formulation and Protocol Development
- Searching for Studies
- Selecting Studies for Inclusion
- Collecting Data from included studies
- Appraisal Individual Studies
- Synthesizing Data
- Interpreting result and drawing conclusions in light of the identified uncertainties
- Presenting data and results

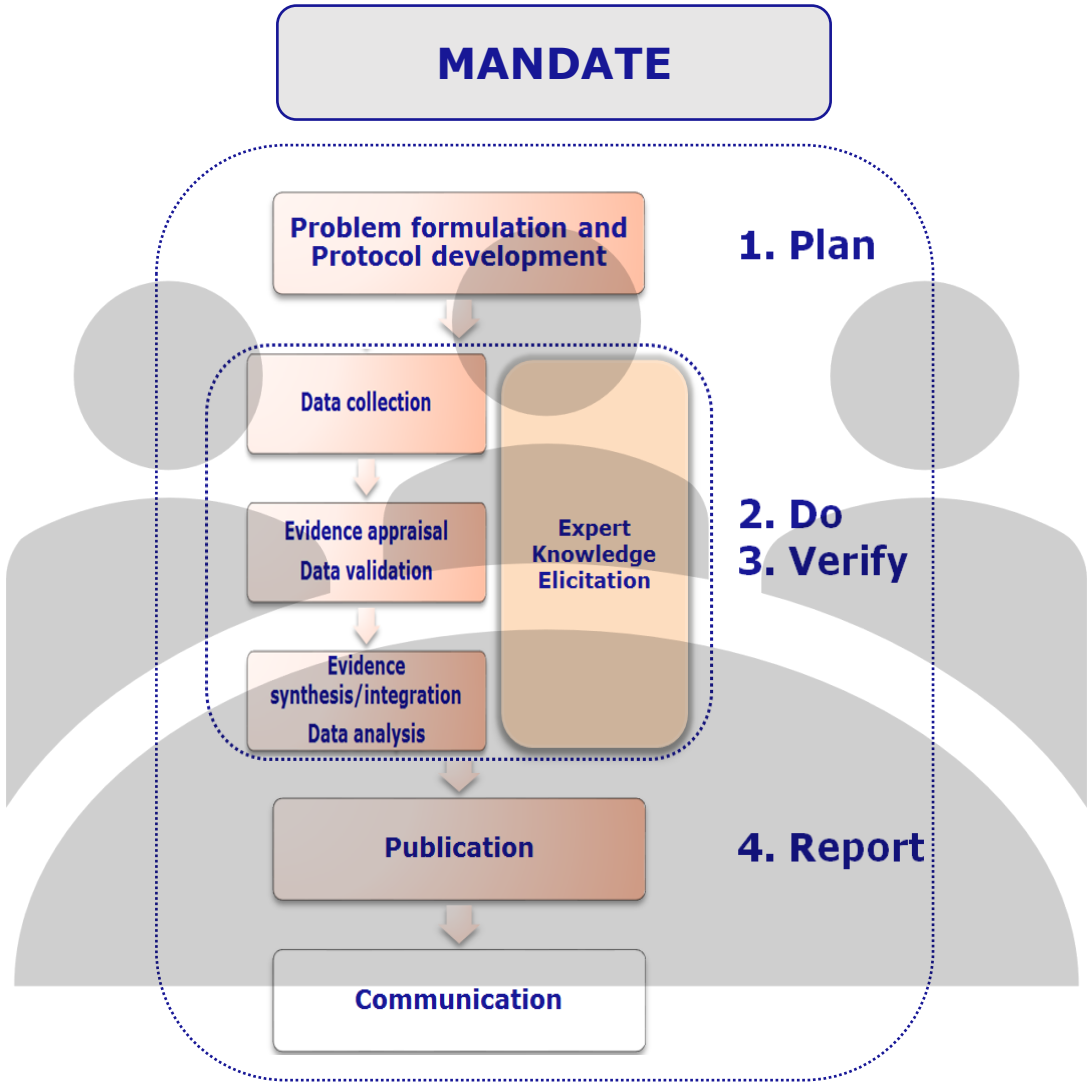
Topic modelling

AI Tool for Abstract Screening: replace one out of two human experts

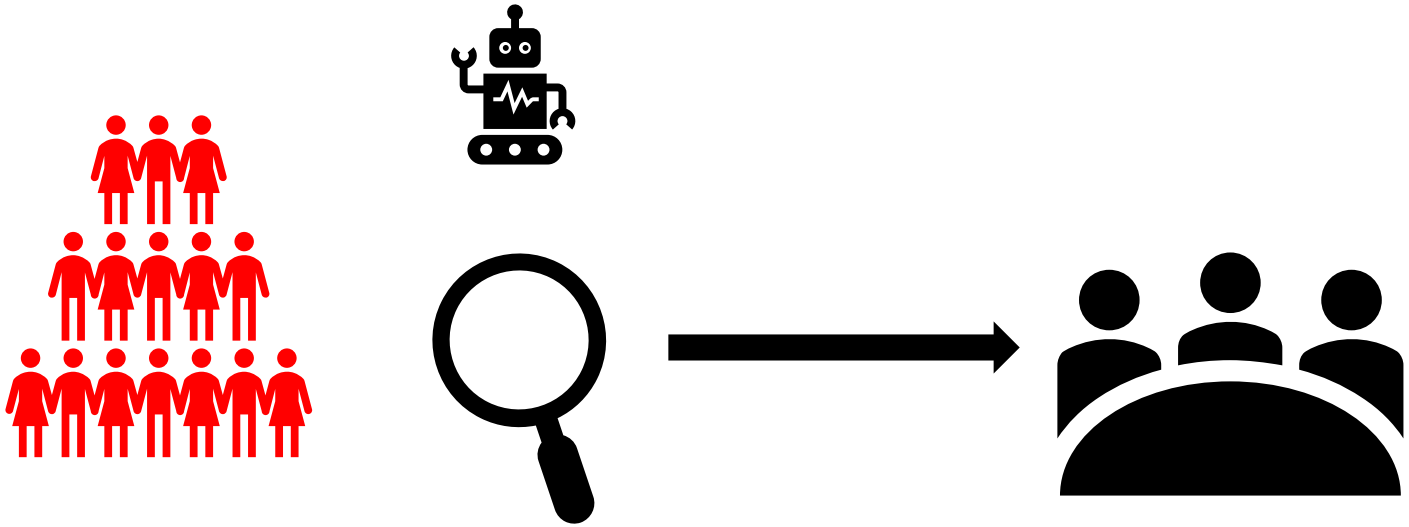
a) AI Tool for Data Extraction using Named Entity Recognition (with US-EPA)

b) Build an EFSA Ontology deriving EFSA historical data from DistillerSR

The RA process: EXPERTISE

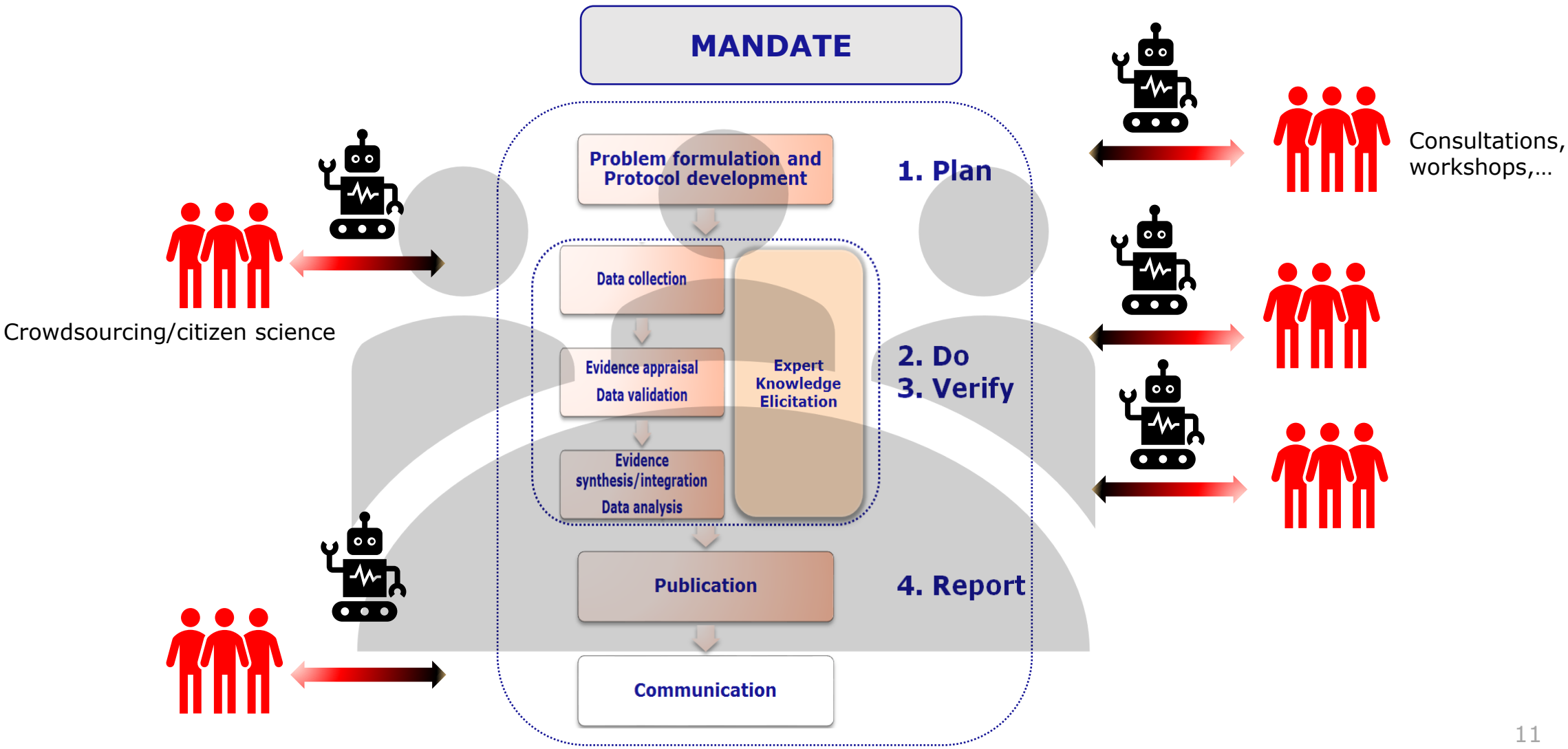


Identification of expertise

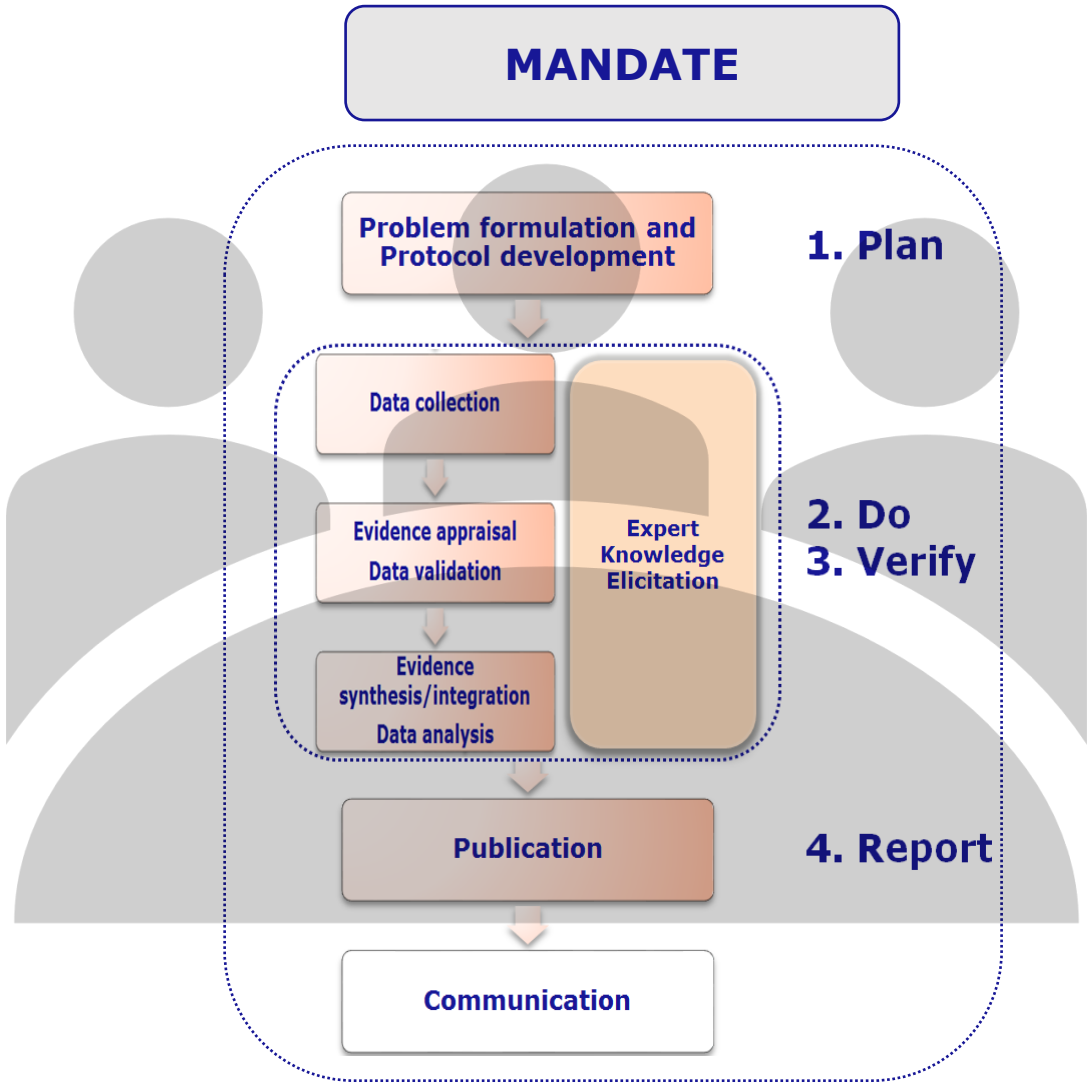


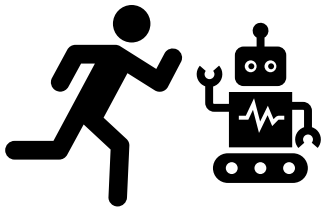
Staff
Domain Experts
Risk assessment experts
Hearing experts
Institutional expertise
Partners
Contractors

The RA process: ENGAGE



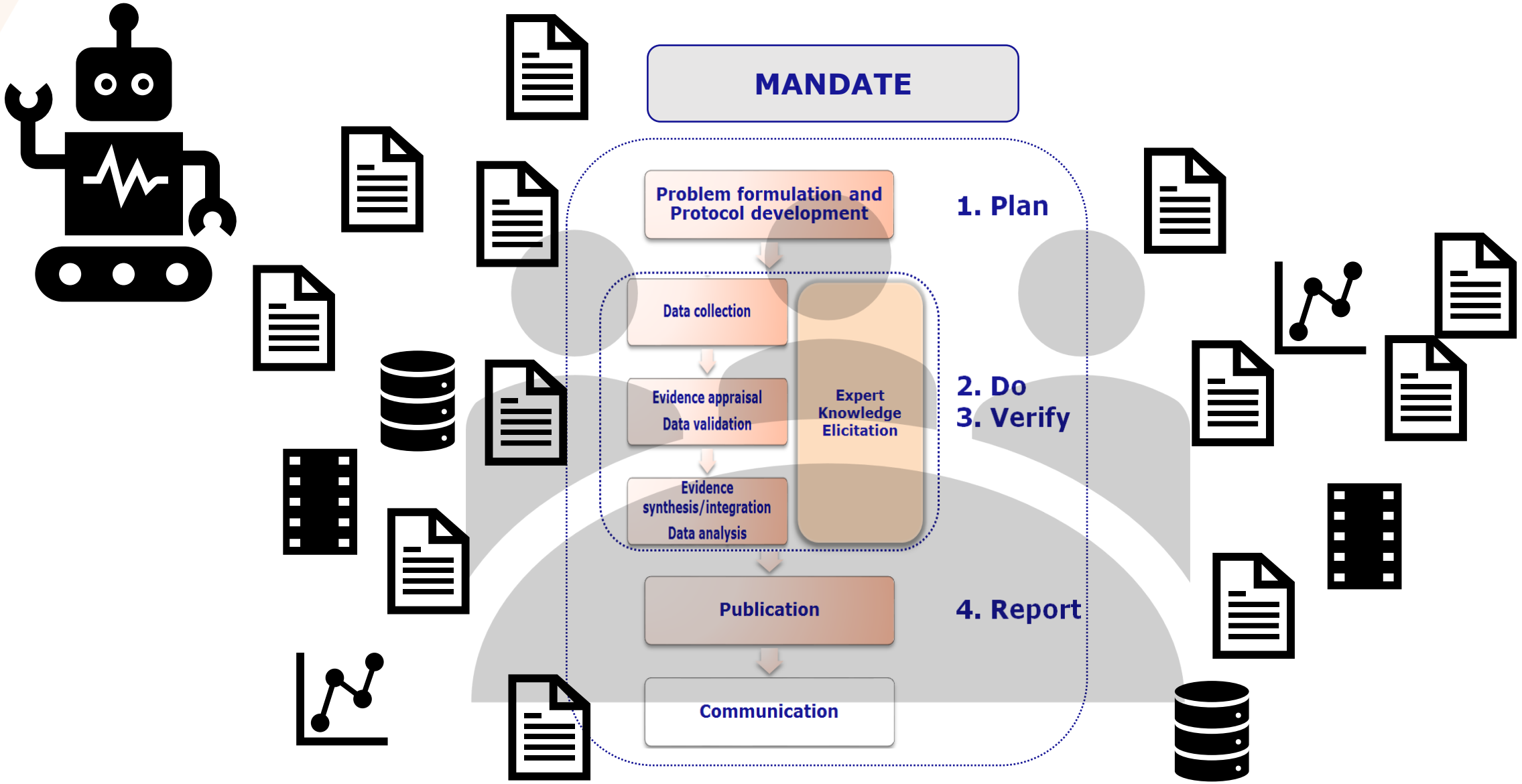
The RA process: Preparedness





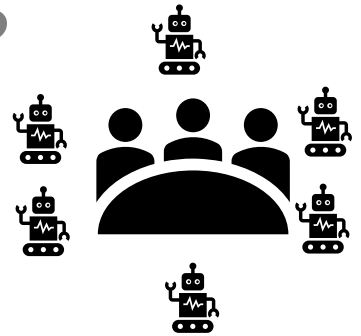
Fit methods
Access to the latest data
Big data
Forecasting

The RA process: Knowledge management

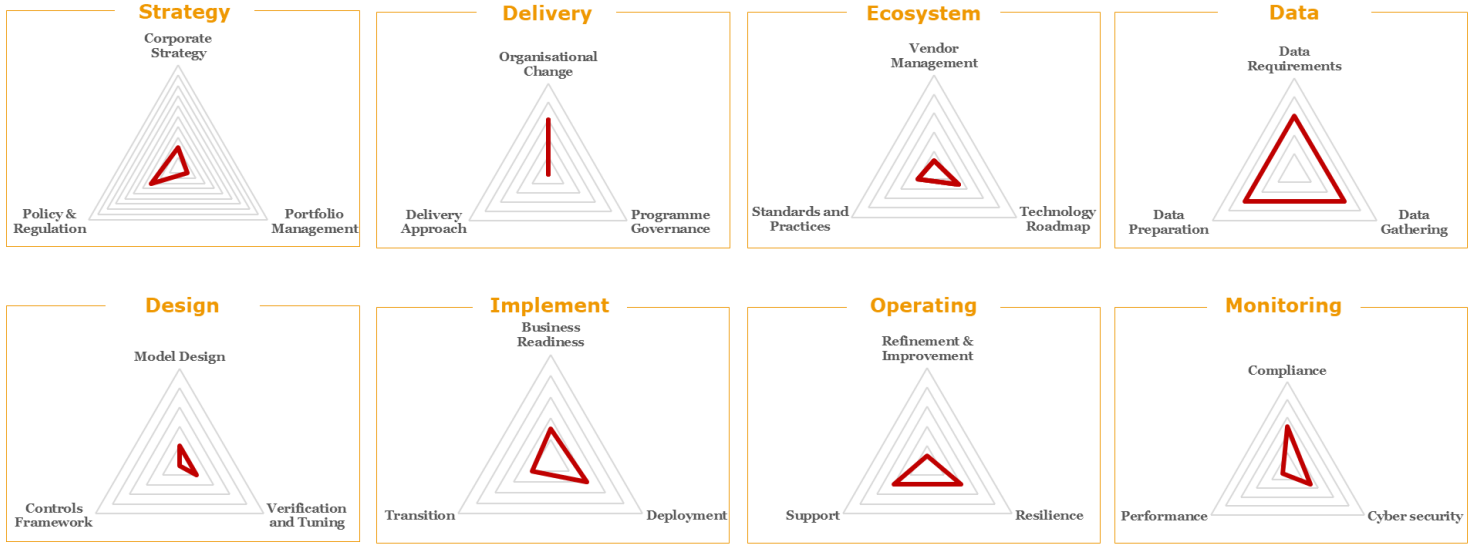


To conclude

- Is there a role for AI in regulatory science?



- Are we ready?



To conclude

- **EU Regulatory framework proposal on Artificial Intelligence**

  - Adequate risk assessment and mitigation systems;
  - High quality of the datasets feeding the system to minimise risks and discriminatory outcomes;
  - Logging of activity to ensure traceability of results
  - Detailed documentation providing all information necessary on the system and its purpose for authorities to assess its compliance;
  - Clear and adequate information to the user;
  - Appropriate human oversight measures to minimise risk;
  - High level of robustness, security and accuracy.

AI virtual community

VISION

"WE STRIVE FOR THE USE OF **TRUSTWORTHY AND HUMAN-CENTRIC** ARTIFICIAL INTELLIGENCE FOR **INCREASED COLLABORATION** AMONGST EU AGENCIES AND MEMBER STATES, WHILST SEEKING EFFICIENCY GAINS AND DEMONSTRATING THE OVERALL **ADDED-VALUE AND CONTRIBUTION OF EU AGENCIES AND MEMBER STATES** TO THE EU AI STRATEGY".

Capabilities		Customers		Benefits		
Artificial Intelligence	+	EU Agencies and Member States	+	European society and economy	+	Efficiency gains	+	Increased maturity and capabilities in AI

Strategic objectives

Develop and promote the AI Community:
Develop and showcase the Community and its achievements both internally and externally, foster cross-Agency/Member State and cross-stakeholder collaboration, bring ideas from within but also outside the Community without any barriers.

Share knowledge and increase maturity:
Foster knowledge, learning and best practice sharing between Community members to increase the overall AI maturity level of EU Agencies and Member States.

Increase synergies, reuse and efficiency:
Leverage the EU (Agencies) network and the AI Community to create efficiency gains through e.g. reusing existing data, code, resources, knowledge or initiatives or working towards new synergies/innovations.

Collaborate for the implementation of common AI initiatives and projects:
Develop and share common initiatives, experiences and projects through concrete AI use cases that can be beneficial to the Agencies and other stakeholders (Member States, Industry, Citizens, Policy Makers).

THE AI VIRTUAL COMMUNITY PLEDGE

We Strive For

The use of trustworthy and human-centric Artificial Intelligence for increased collaboration amongst EU Agencies and Member States, whilst seeking efficiency gains and demonstrating the overall added-value and contribution of EU Agencies and Member States to the EU AI Strategy.

Action Pledge

We _____ *(community member)* are committed to working towards the development and promotion of the AI Community, knowledge sharing to increase reuse and maturity, and collaboration across common AI initiatives and projects.

We Commit

1. To understand, share, develop, and leverage AI capabilities.
2. To be open to inform or collaboration with any EU Agency and Member State that shares the same vision and strategic objectives.
3. To maintain a positive and cooperative working relationship viewing failure as a natural part of learning and experimenting in a trusted environment.
4. To execute the roles and responsibilities I am assigned to which can evolve over time and/or upon request.
5. To actively engage in the community by providing relevant content, participating in exchanges and promoting the reuse of existing resources.
6. To leverage the Virtual Community's community tool as the platform that supports meetings, interactions and the community feed.

Roles and Responsibilities

- *Leaders*: members that oversee the community evolution by ensuring the implementation of the strategy and lead one or more use cases.
- *Contributors*: members that contribute and actively engage in community activities which typically includes one or more use cases.
- *Observers*: members interested in increasing their level of awareness in AI and support the overall community vision.
- *Facilitators*: individuals mandated by the community to

We Affirm

- Meetings will be held on a regular basis, chaired by leading members and assisted by the facilitators. Active participation in these meetings is expected from all members.
- Each member is committed to ensuring that at least one representative will be attending the meetings.
- Meeting agendas and minutes will be prepared by the facilitators. It Is expected from leaders and contributors to, on an ad-hoc basis, prepare and present their advancement and update the community.
- Beyond these meetings, day-to-day activities are expected to be driven by the leading agencies for the use cases and the overall development of the community.

Confidentiality

- The Virtual AI Community will offer an environment where resources, data, code, and tools can be shared in total confidence. All community members are expected to respect the privacy and confidentiality of the information shared on the platform.
- The members of the community are expected to commit with to the applicable European regulations.

All of the above-mentioned guiding principles will be reviewed on a regular basis and can lead to the adaptation of this pledge.

As of September 2020, the members of the community are listed below. They have all committed to the AI Virtual Community Pledge.

VIRTUAL COMMUNITY
JOINT EU FORCES ON AI

Thank you!