AI, Data and Robotics Association

Towards the Strategic Research, Innovation and Deployment Agenda (SRIDA)

Fredrik Heintz, Nabil Belbachir, Ana Garcia, Ed Curry

adr-association.eu

A joint initiative by:

Context

- The SRIDA for the AI, Data and Robotics partnership dates from September 2020.

- **SRIDA update is necessary with a focus on the cross-roads between AI, Data and Robotics** (= raison d'etre for Adra)

- WP25-27 preparation to start early next year, therefore **new SRIDA to be delivered Summer 2023**

Members of Coordination and Editorial Teams

- Coordination Team
  - Fredrik Heintz (chair)
  - Ana Garcia
  - Nabil Belbachir
  - Edward Curry
- Editorial Team
  - Fredrik Heintz (chair)
  - Edward Curry
  - Nabil Belbachir
- Reference Group
  - Jon Agirre Ibarbia, José Saenz, Christophe Leroux, Morten Irgens, Rita Cucchiara, David Bisset, Edward Curry, Freek Bomhof, Hans De Canck, Anne Hermsen.
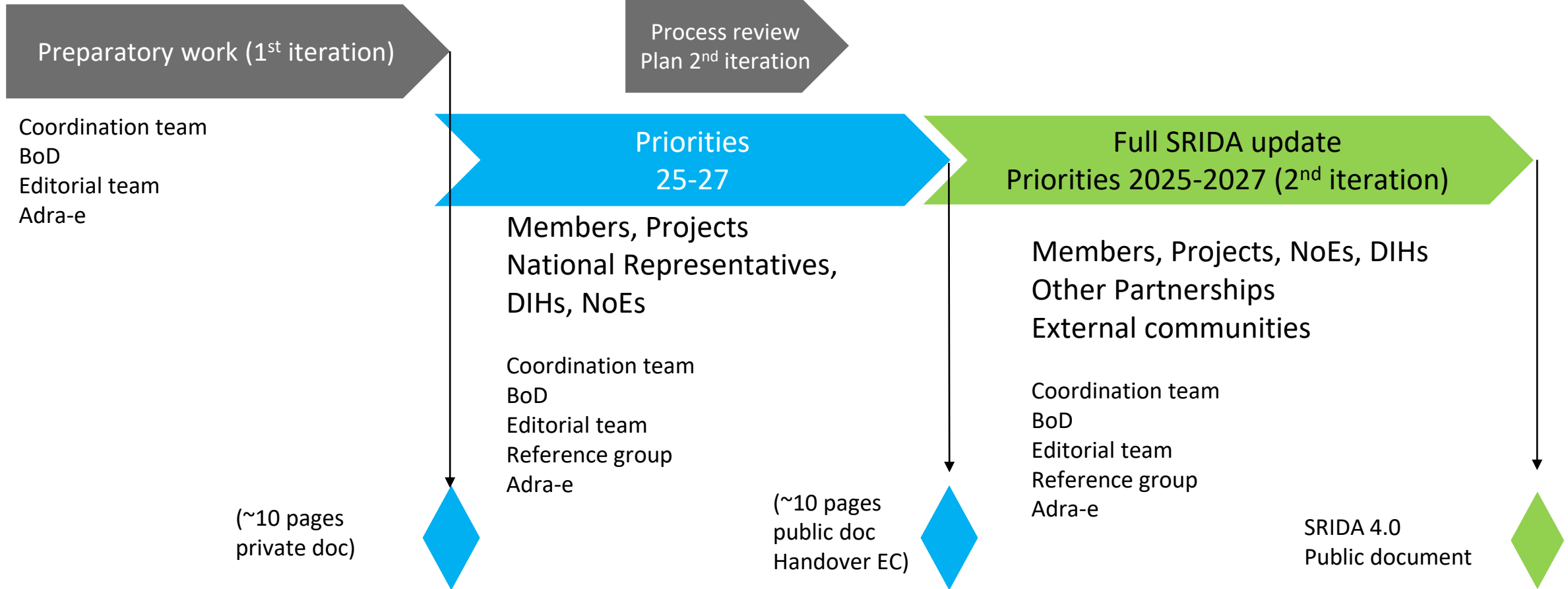
Analysis of current SRIDA (v3.1)

- Overall, the SRIDA still is relevant and makes sense

- The main issues are

  - it is at a high level of abstraction and

  - there are very many recommendations

  - structured as three deep dives (AI, Data, Robotics) rather than a shared roadmap

- Thus, it is better to

  - start from the existing SRIDA and make it more specific and concrete rather than start from scratch

  - include shared challenges that give Adra purpose (i.e. provide connective tissue between AI, Data and Robotics, and Industry and Research)

Way of working

- Use the existing SRIDA as the starting point

- Work on a ~10 page orientations paper ("Adra Strategic orientations for SRIDA 4.0")

  - Clearly argue for why **increased funding** is required and the impact with/without funding

  - Identify **the top priorities** for the next WP

  - Identify the **most promising topics** involving AI, data and robotics

- Workshops with member states to better understand their priorities

- Workshops with Adra community, organized by Adra-e

- The draft position document is made available for discussions and comments (survey).

Proposed Timeline (2022 - 2023): Overview planning

| Nov 2022 | Dec 2022 | Jan 2023 | Feb 2023 | Mar 2023 | Apr 2023 | May 2023 | Jun 2023 |

Preparatory work (1st iteration)

Process review
Plan 2nd iteration

Coordination team
BoD
Editorial team
Adra-e

Priorities 25-27

Full SRIDA update
Priorities 2025-2027 (2nd iteration)

Members, Projects
National Representatives,
DIHs, NoEs

Coordination team
BoD
Editorial team
Reference group
Adra-e

Members, Projects, NoEs, DIHs
Other Partnerships
External communities

Coordination team
BoD
Editorial team
Reference group
Adra-e

(~10 pages
private doc)

(~10 pages
public doc
Handover EC)

SRIDA 4.0
Public document

Proposed Chapters/Part of Position Document

- Vision 2030
  - Significant new societal, political or scientific developments
  - Point(s) on the horizon / grand challenges (=ambitious/novel/disruptive)
  - Gaps
- Priorities (of the partnership) for 2025-27
  - Goals for village EU: building a community of AI, Data and Robotics
  - Goals for public perception and education
  - Goals for markets and development
  - Goals for regulation and policy advice
  - Goals for research and innovation
- Implementation of those priorities
  - What will be funded in 2021-24 that is already on the path to support this
  - Instruments
  - Research/innovation topics

Discussion / Big Tickets AI, Data and Robotics

1. What are the Research & Innovation Strategic Gaps?

- **Groundbreaking** technological **foundations** in AI, data, and robotics
  - **Autonomy:** self-supervised, self-adaptive and self-evolving learning and computing systems beyond the human-in-the-loop.
  - **Performance**: Breakthrough tools, methods and hardware for efficient machine learning requiring less data & computing.
  - **Predictability**: Novel foundations in learning and computing that can pave the way to predictable behavior of AI-powered systems.
- Next generation **smart embodied (robotic) systems** combining AI, data, and robotics
  - Smart Mind in a Smart body – deployable, safe, easy to use, flexible.
  - Self-aware and self-improving autonomous systems.
- **Effective and Trustworthy General Purpose AI** mitigating potential negative side effects for broad range of downstream areas
  - The balancing act between regulation of GPAI models and AI value chain for effective AI systems.
  - **Personalized AI** that interacts with individuals in both directions. Putting humans in the centre.
  - **AI for creative processes.** Not only text and articles, but experiences, videos, images, experiences in the metaverse, etc.
  - **AI trained on hybrid sources of information** such as design, data, humanexpertise and science is still a major challenge for AI.
- **Interoperable** and **integrated** framework for data ecosystems providing the basis to improve existing processes (in business, in society) but also offering the opportunity for new data driven business models
- **R&I and tools for compliance**
- **Green deal actions (for ADR)**
- **Monitoring systemic changes in society because of usage of ADR**

Discussion / Big Tickets – AI, Data and Robotics

2. What are the subsequent key efforts that need to be considered (incl. through PPP)

- Bring together national efforts at **EU level** (e.g.: in general purpose AI)

- **Collaborative AI challenges** – **mobilising** the community (research and industry) to address **major S&T challenges** and demonstrate progress in AI accuracy, robustness, etc.

- **Strengthening** and **interconnecting** R&I **excellence centres** (with access to computing and data infrastructure), leveraging advances in neuroscience, edge (Tiny ML), material science, quantum, etc, to increase **attractiveness** for **industry & talents**

- **Large-scale pilots**, bringing research and industry, focusing on identified R&I needs (true intelligence/autonomy/robotics/ compliance requirements) of **high innovation potential** to industry

- **R&I and tools** for **compliance** with existing and emerging **legislation** (GDPR, DGA, DA, AI Act...)

- **Technologies** and tools for **managing**, **federating** and **validating data sets** for **AI** and **Data Spaces**, ensuring quality, portability and interoperability

Feedback – information needed

- Research priorities – what are the actual funding gaps (where companies/others are not investing)
- Evidence base for all research priorities (why and how?)
- Where does it make sense to pool resources at EU level?
- What are the business opportunities for AI, data and robotics made in Europe?
- Who are the main actors in Europe when it comes to general purpose AI?
- What are lessons learned from elsewhere that we can leverage?

Get in touch

✉ secretary-general@adr-association.eu

in www.linkedin.com/company/adr-association

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